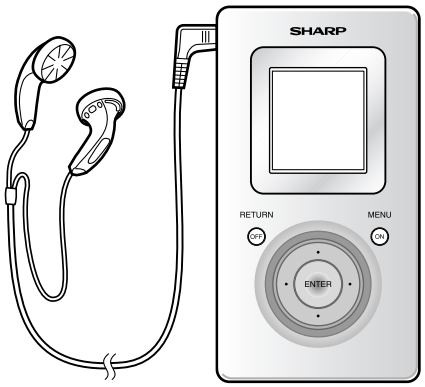
# SHARP SERVICE MANUAL

No. XXXXXXXXXXXXX




# PORTABLE JUKEBOX

## MODEL HR-MB3(S)

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**Parts Guide**

Parts marked with " ⚠ " are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

**1. Employing lead-free solder**

"Main PWB" of this model employs lead-free solder. The LF symbol indicates lead-free solder, and is attached on the PWB and service manuals. The alphabetical character following LF shows the type of lead-free solder.

Example:

Sn-Ag-Cu Indicates lead-free solder of tin, silver and copper.

**2. Using lead-free wire solder**

When fixing the PWB soldered with the lead-free solder, apply lead-free wire solder. Repairing with conventional lead wire solder may cause damage or accident due to cracks.

As the melting point of lead-free solder (Sn-Ag-Cu) is higher than the lead wire solder by 40 °C, we recommend you to use a dedicated soldering bit, if you are not familiar with how to obtain lead-free wire solder or soldering bit, contact our service station or service branch in your area.

**3. Soldering**

As the melting point of lead-free solder (Sn-Ag-Cu) is about 220 °C which is higher than the conventional lead solder by 40 °C, and as it has poor solder wettability, you may be apt to keep the soldering bit in contact with the PWB for extended period of time. However, Since the land may be peeled off or the maximum heat-resistance temperature of parts may be exceeded, remove the bit from the PWB as soon as you confirm the steady soldering condition.

Lead-free solder contains more tin, and the end of the soldering bit may be easily corrected. Make sure to turn on and off the power of the bit as required.

If a different type of solder stays on the tip of the soldering bit, it is alloyed with lead-free solder. Clean the bit after every use of it.

When the tip of the soldering bit is blackened during use, file it with steel wool or fine sandpaper.

Be careful when replacing parts with polarity indication on the PWB silk.

Lead-free wire solder for servicing

| Ref No. | Parts No. | Description |
|---|---|---|
| PWB-A | 92LPWB6362HDDS | Main |

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

# CHAPTER 1. GENERAL DESCRIPTION

## [1] Specifications

| | |
|---|---|
| **Power source:** | DC 6 V: AC adaptor<br>(AC 100 - 240 V, 50/60 Hz)<br>DC 5 V: USB bus power |
| **Power consumption:** | 7 W (switching type AC adaptor) |
| **Charging time:** | Approx. 4 hours<br>(fully charged, when using the AC adaptor included with the unit) |
| **Dimensions:** | Width: 56.5 mm (2-1/4")<br>Height: 17.4 mm (11/16")<br>Depth: 105.5 mm (4-5/32") |
| **Weight:** | 113 g (0.25 lbs.) |
| **Sockets:** | Earphones<br>(impedance: 32 ohms)<br>USB (Exclusive type)<br>DC input |
| **Frequency response:** | 20 - 20,000 Hz |

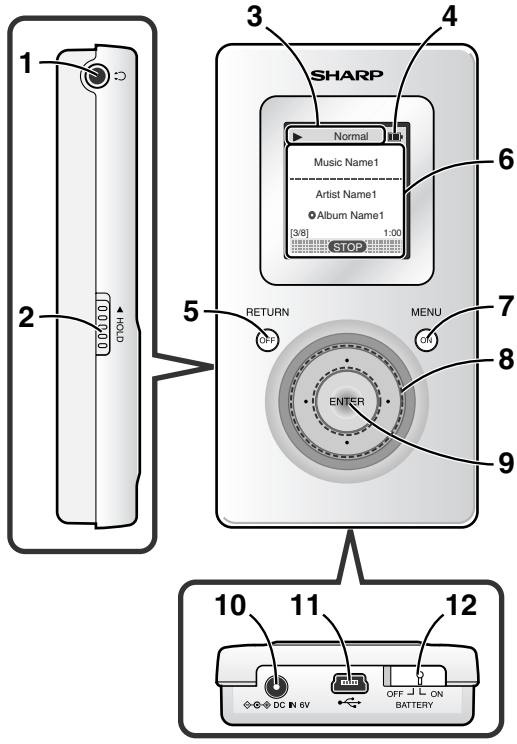
| | |
|---|---|
| **Audio format:** | WMA (CBR/VBR),<br>MP3 (CBR/VBR), WAV (PCM) |
| **Bit rate:** | WMA (32 - 320 kbps),<br>MP3 (8 - 320 kbps) |
| **Sampling frequency:** | WMA (8 - 48 kHz),<br>MP3 (8 - 48 kHz),<br>WAV (22.05 - 48 kHz) |
| **Music MetaData:** | ID3 Tag (Version 1.0/1.1/2.3/2.4), WMA object |
| **Storage media:** | 4 GB hard disk drive (1 inch) |
| **Output level:** | Earphones: 5 mW + 5 mW (maximum output level/32 ohms) |
| **Battery life:** | Up to 20 hours of continuous playback by fully charged re-chargeable Lithium-ion battery |
| **PC interface:** | USB 1.1/2.0 |

**Notes:**
- A combination of sampling frequency and bit rate differs depending on audio format.
- Continuous playback:
  At 128 kbps, in MP3 format (earphone output: 0.1 mW + 0.1 mW, backlight: not set to "Always", equalizer: set to "Flat")
- Actual battery life will vary with use.
- The values are the standard values when the unit is used at an ambient temperature of 25°C (77°F).

## [2] Names of parts

**1. Earphones Socket**
**2. Hold Switch**
**3. Play Mode/Information Indicator**
**4. Battery Indicator**
**5. Return/Power Off Button**
**6. Character/Time/ Information Indicator**
The display varies depending on the operation.
**7. Menu/Power On Button**
**8. Cursor Button**
**9. Play/Stop/Enter/Power On Button**
**10. 6 V DC Input Socket**
**11. USB Socket (Exclusive type)**
**12. Battery Switch**

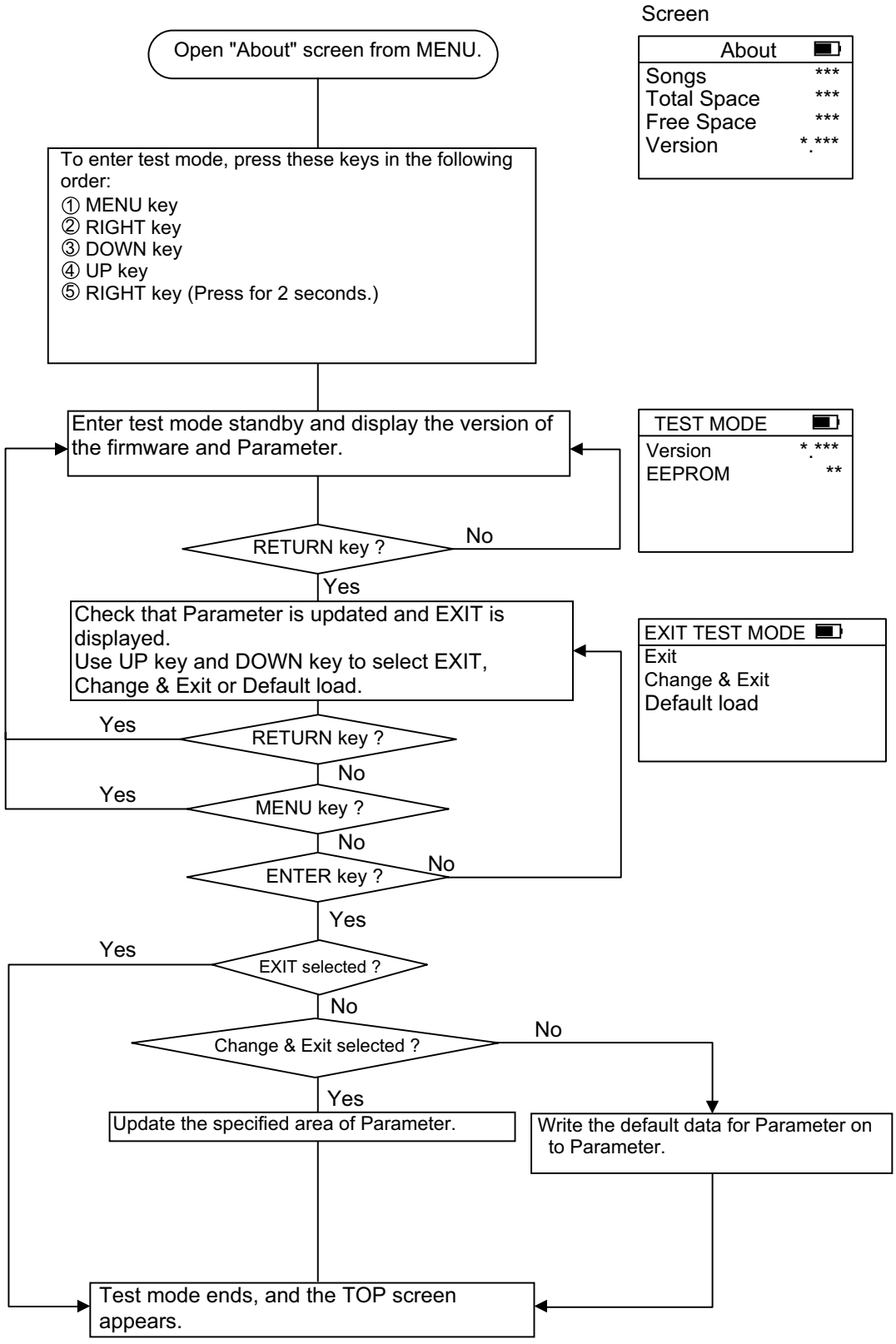
The display language can be changed (default: English).



# CHAPTER 2. ADJUSTMENTS

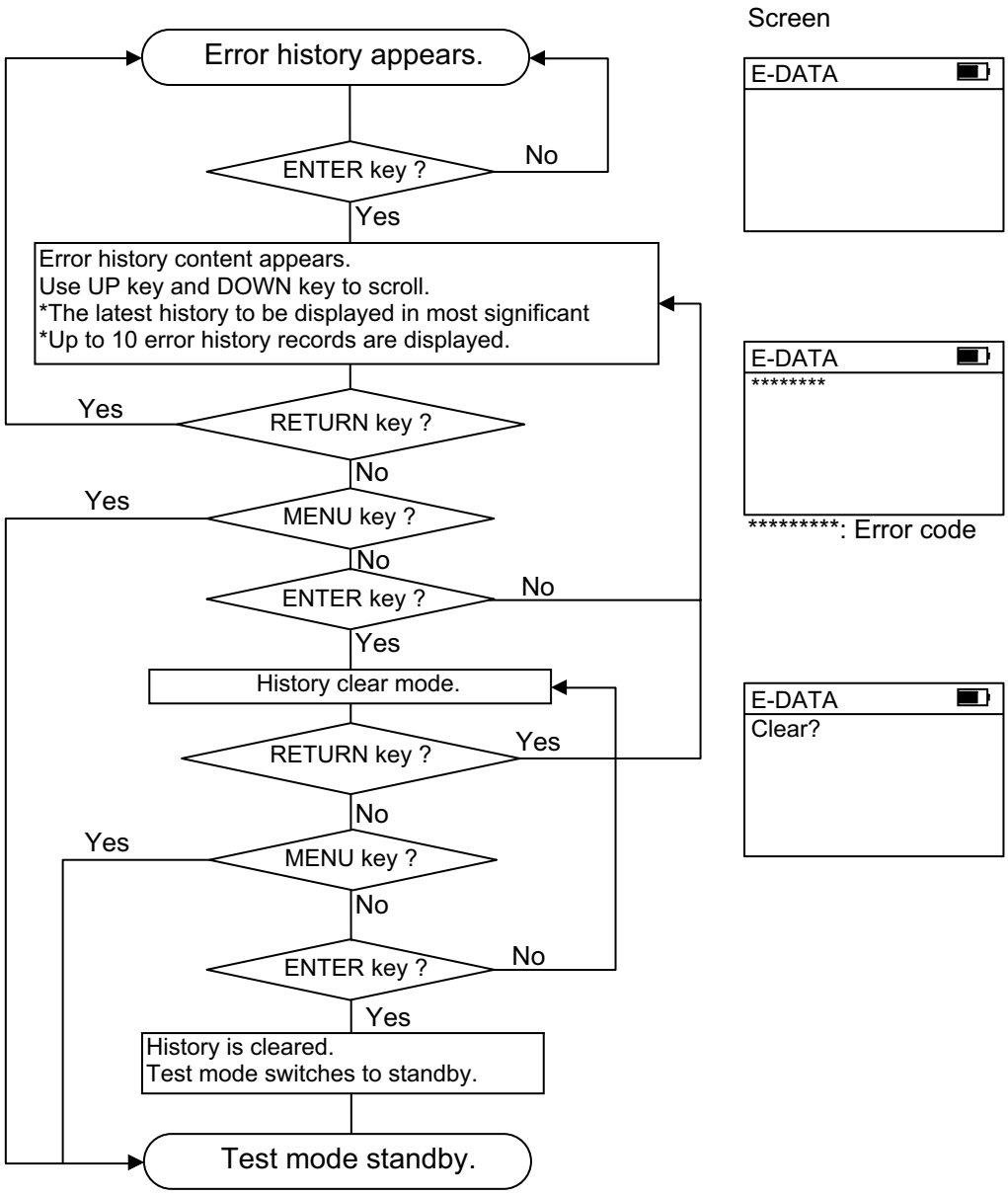
## [1] TEST Mode

### Entering/exiting test mode



## [2] Error History Display

### Error history display



# Error Code List

How to read

```
* *  * *  * * * *
^ ^  ^ ^  ^ ^ ^ ^
TYPE VIEW  CODE
```

| TYPE ** (2Byte) | | |
|---|---|---|
| num | Type | error |
| 01 | ETYPE_DS_ERROR | Error from Data Server. |
| 02 | ETYPE_UI_ERROR | Error in UI. |
| 04 | ETYPE_BATT_ERROR | Battery error. |
| 08 | ETYPE_DB_ERROR | Error from DB. |
| 10 | ETYPE_MKPL_ERROR | Error when creating default playlist. |

| VIEW ** (2Byte) | | |
|---|---|---|
| num | Type | error |
| 01 | EVIEW_LOW_BATTERY_PLAY | Battery has become low during playback. |
| 02 | EVIEW_NOT_OPEN_MASTERTBL | Cannot open MASTER.TBL. |
| 03 | EVIEW_READERR_MASTERTBL | Read error when reading MASTER.TBL |
| 04 | EVIEW_INVALID_MASTERTBL | MASTER.TBL is invalid or the file format is not supported. |
| 05 | EVIEW_CANT_FIND_FILE_DIR | Cannot search files or folders. |
| 06 | EVIEW_FILE_NOT_OPEN | Cannot open MP3, WMA or WAV file. |
| 07 | EVIEW_READ_ERR_TAG | Read error when searching for tag of MP3, WMA or WAV file. |
| 08 | EVIEW_INVALID_TAG | Tag of MP3, WMA or WAV file is invalid or not supported. |
| 09 | EVIEW_CANT_DEL_MASTERTBL | Cannot rename/delete the existing MASTER.TBL. |
| 0A | EVIEW_CANT_CREATE_MASTERTBL | Cannot create a new MASTER.TBL. |
| 0B | EVIEW_WRITE_ERR_MASTERTBL | MASTER.TBL write error. |
| 0C | EVIEW_NOT_FREE_MASTERTBL | Free space is likely to become insufficient when writing MASTER.TBL. |
| 0D | EVIEW_USER_STOP_MASTERTBL | Writing MASTER.TBL has been interrupted at the user's request. |
| 0E | EVIEW_LOW_BATTERY_MASTERTBL | Writing MASTER.TBL has been interrupted due to low battery. |
| 0F | EVIEW_UNKNOWN_STOP_MASTERTBL | Writing MASTER.TBL has been interrupted due to sudden power cut, etc. |
| 10 | EVIEW_FILE_NOT_FOUND_MASTERTBL | No target file was found when creating MASTER.TBL. |
| 11 | EVIEW_FILE_NOT_FOUND_REC | Cannot find the existing file list . |
| 12 | EVIEW_CANT_CREATE_REC | Cannot create a new WMA or WAV file. |
| 13 | EVIEW_CANT_CREATE_DIR_REC | Cannot create a directory. |
| 14 | EVIEW_WRITE_ERR_REC | WMA or WAV file write error. |
| 15 | EVIEW_MAX_FILE_SIZE_REC | File size limit (FAT32: 4G) has been or is likely to be exceeded when writing WMA or WAV file |
| 16 | EVIEW_NOT_FREE_REC | Free space has or is likely to become insufficient when writing WMA or WAV file. |
| 17 | EVIEW_LOW_BATTERY_REC | Writing WMA or WAV file has been interrupted due to low battery. |
| 18 | EVIEW_UNKNOWN_STOP_REC | Writing WMA or WAV file has been interrupted due to sudden power cut, etc. |
| 19 | EVIEW_NOT_OPEN_PLAYLIST | Cannot open the specified M3U or PLS file. |
| 1A | EVIEW_PLAY_ERROR_PLAYLIST | Read error during playback of M3U or PLS file. |
| 1B | EVIEW_DIR_NOT_FOUND_PLAYLIST | Cannot find the existing file list. (Cannot find a directory.) |
| 1C | EVIEW_CANT_CREATE_PLAYLIST | Cannot create a new M3U or PLS file. |
| 1D | EVIEW_READ_ERR_PLAYLIST | M3U or PLS file read error. |
| 1E | EVIEW_CANT_OPEN_PLAYLIST | Cannot open the specified M3U or PLSfile. |
| 1F | EVIEW_WRITE_ERR_PLAYLIST | M3U or PLS file write error. |
| 20 | EVIEW_NOT_FREE_PLAYLIST | Free space has become insufficient when writing M3U or PLS file. |
| 21 | EVIEW_USER_STOP_PLAYLIST | Writing M3U or PLS file has been interrupted at the user's request. |
| 22 | EVIEW_LOW_BATTERY_PLAYLIST | Writing M3U or PLS file has been interrupted due to low battery. |
| 23 | EVIEW_UNKNOWN_STOP_PLAYLIST | Writing M3U or PLS file has been interrupted due to sudden power cut, etc. |
| 24 | EVIEW_LOW_BATTERY | Low battery. |
| 25 | EVIEW_BATTERY_ERR | Battery error. |
| 26 | EVIEW_FILE_ERROR | File error. |
| 27 | EVIEW_FILE_NONE | No file exists. |
| 28 | EVIEW_DISK_ERROR | Disk error. |
| 29 | EVIEW_HOLD | HOLD function is active. |
| 2A | EVIEW_INTERNAL_ERROR | Internal error. |

| CODE **** (4Byte) | | |
|---|---|---|
| num | Type | error |
| 0001 | REALTIME_FAIL | |
| 0002 | DECODE_ERROR | |
| 0003 | REC_MEDIA_FULL | |
| 0004 | MEDIA_NOT_READABLE | |
| 0005 | MEDIA_NOT_AVAILABLE | |
| 0006 | MEDIA_NOT_WRITABLE | |
| 0007 | BAD_MEDIA | |
| 8001 | MSG_FILE_NOT_FOUND | |
| 8002 | MSG_EMPTY_FILE | |
| 8003 | MSG_META_DATA_NOT_FOUND | |
| 8005 | MSG_INVALID_META_TYPE | |
| 8007 | MSG_UNSUPPORTED_BITRATE | |
| 8008 | MSG_UNSUPPORTED_SAMPLERATE | |
| 8009 | MSG_AIC23_WRITE_FAILURE | |
| 800A | MSG_INVALID_AIC23_REG_ADDR | |
| 800B | MSG_INVALID_MONO_MODE | |
| 800D | MSG_INVALID_VOL_LEVEL | |
| 8010 | MSG_NO_CHANNELS_AVAILABLE | |
| 8011 | MSG_INVALID_CHANNEL_ID | |
| 8012 | MSG_FAILURE | |
| 8014 | MSG_EOF | |
| 8015 | MSG_MEDIA_NOT_AVAILABLE | |
| 8016 | MSG_MEDIA_FULL | |
| 8017 | MSG_FILE_IN_USE | |
| 8019 | MSG_DIRECTORY_NOT_EMPTY | |
| 801A | MSG_DUPLICATE_FILENAME | |
| 801B | MSG_INVALID_FILE_TYPE | |
| 801F | MSG_BOF | |
| 8021 | MSG_PARTIAL_LISTING | |
| 8022 | MSG_FIFO_EMPTY | |
| 8023 | MSG_NOT_AVAILABLE | |
| 8024 | MSG_INVALID_FILE_FORMAT | |
| 8025 | MSG_CHANNEL_IN_BROWSE | |
| 8026 | MSG_CHANNEL_NOT_IN_BROWSE | |
| 8028 | MSG_MEDIA_TIMEOUT | |
| 8029 | MSG_BAD_MEDIA | |
| 802A | MSG_DIR_ID_NOT_A_DIRECTORY | |
| 802B | MSG_INSUFFICIENT_BUFFER_SIZE | |
| 802D | MSG_UNEXPECTED_ERROR | |
| 802E | MSG_UNSUPPORTED_FAT_TYPE | |
| 802F | MSG_UNSUPPORTED_FILE_FORMAT | |
| 8030 | MSG_UNSUPPORTED_BIT_AND_SMPL | |
| 8031 | MSG_LSE_DRM_INIT_FAILED | |
| 8032 | MSG_UNSUPPORTED_DIRECTORY_STRUCTURE | |
| 8033 | MSG_UNSUPPORTED_MEDIA_SIZE | |
| 8034 | MSG_DEFAULT_REC_FILE_LIMIT | |
| 8035 | MSG_UNSUPPORTED_IMAGE_FORMAT | |
| 8036 | MSG_UNSUPPORTED_IMAGE_SIZE | |
| 8037 | MSG_UNSUPPORTED_NUMBER_OF_CHANNELS | |
| 8038 | MSG_UID_NOT_IN_LIST | |
| 8039 | MSG_FILE_ERROR | |
| 803A | MSG_FILE_NOT_OPEN | |
| 803B | MSG_INVALID_MODE | |
| 803C | MSG_INVALID_TRACK_TYPE | |
| 803D | MSG_CACHE_FULL | |
| 8200 | DB_ERR | |
| 8201 | DB_ERR_RECORD_LIMIT | |
| 8202 | DB_FOLDER_DEPTH_LIMIT | |
| 8203 | DB_DEFAULT_FOLDER_NOT_EXIST | |
| 8204 | DB_ERR_FILE_CHECKSUM | |
| 8205 | DB_ERR_CREATE_DIR | |
| 8206 | DB_ERR_CREATE_FILE | |
| 8207 | DB_ERR_NOT_MATCH_PROFILE | |
| 8208 | DB_ERR_MEDIA | |
| 8209 | DB_ERR_OPEN_FILE | |
| 820A | DB_ERR_FILE_CORRUPT | |
| 820B | DB_ERR_CLOSE_FILE | |
| 820C | DB_ERR_READ_FILE | |
| 820D | DB_ERR_WRITE_FILE | |
| 820E | DB_ERR_OPEN_CHANNEL | |
| 820F | DB_ERR_CLOSE_CHANNEL | |
| 8210 | DB_ERR_CHDIR | |
| 8211 | DB_ERR_DUPLICATE_FILENAME | |
| 8212 | DB_INVALID_INDEX | |
| 8214 | DB_ERR_CREATE_NEW_DB | |
| 8215 | DB_ERR_RENAME_OLD_DB | |
| 8216 | DB_ERR_NO_DB | |
| 8217 | DB_ERR_NO_CHANNEL | |
| 8218 | DB_ERR_CREATE_NEW_PLS | |
| 8219 | DB_ERR_FILELIST | |
| 821A | DB_ERR_DELETE_FILE | |
| 821B | DB_ERR_SYSTEM | |
| 821C | DB_ERR_PLS_ADD_SONG | |
| 821D | DB_ERR_LOW_BATTERY | |
| 821E | DB_ERR_NO_SONG | |
| C001 | eERR_BATT_CHARGE | Charging error. |
| C002 | eERR_BATT_POWER | Power is low. |

## [4] Updating the firmware

### 1. Plug in the AC adaptor.

1. The charging mode is activated. Press the ENTER or MENU key to turn on the power.

### 2. Copy the firmware.

1. Connect to a PC with the USB cable.
2. Copy the UPGRADE.BIN to ROOT of the drive.
3. Disconnect the USB cable.

### 3. Execute update.

1. Press the RETURN key to turn off the power, and unplug the AC adaptor.
2. Plug in the AC adaptor again.
3. "UpdatingFW..." appears and the update starts.
4. After the update is completed, the charging mode is activated.

### 4. Perform the following:

1. From the Menu List, open the About screen and check the firmware version.
2. From the Menu List, execute Format.
3. From the Menu List, execute Default.
4. Enter the test mode, then from Exit test mode, execute Default load.

## [5] Replacing the HDD unit

### 1. Replace the HDD unit.

### 2. Plug in the AC adaptor.

1. "HDD error" appears.
2. Press these keys in the following order:
   - MENU KEY
   - RIGHT KEY
   - DOWN KEY
   - UP KEY
   - RIGHT KEY (Press for 2 seconds.)
3. "Formatting..." appears and the format starts.
4. Follow these onscreen instructions:
   i) ConnectUSB
   ii) CopyUpgrade.Bin
   iii) UnplugUSB

### 3. Disconnect the USB cable. "UpdatingFW..." appears and the update starts.

After the update is completed, the charging mode is activated.

### 4. Perform the following:

1. From the Menu List, open the About screen and check the firmware version.
2. From the Menu List, execute Default.
3. Enter the test mode, then from Exit test mode, execute Default load.

## [6] Downloading the latest firmware

### 1. Visit the following websites

1. "http://sharp-world.com/worldwide/index.html"....Except for U.K.
2. “http://www.sharp.co.uk/”...For U.K.

# CHAPTER 3. MECHANISM BLOCKS

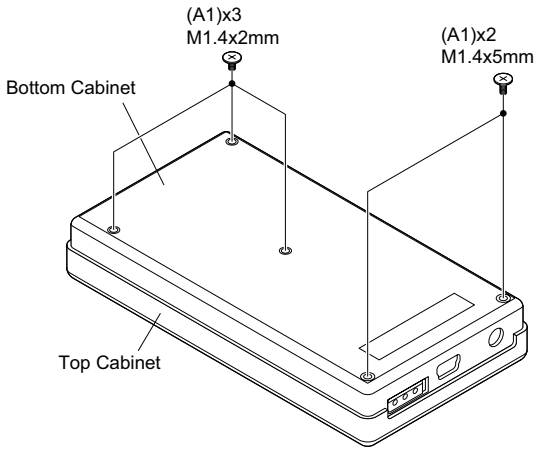
## [1] Caution on diassembly

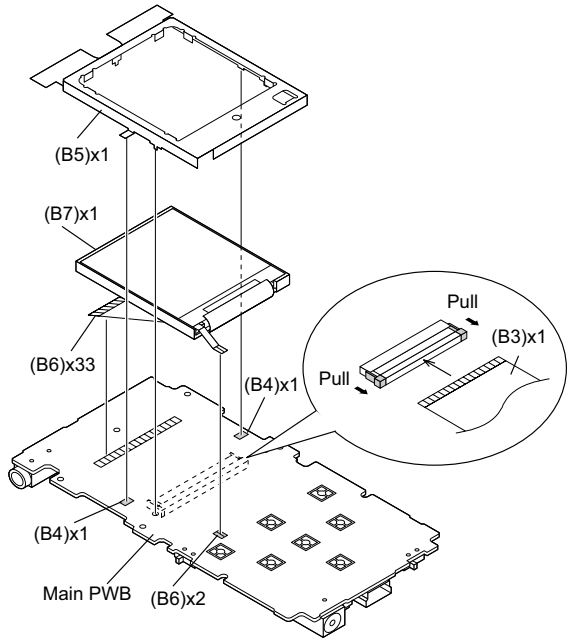
Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:

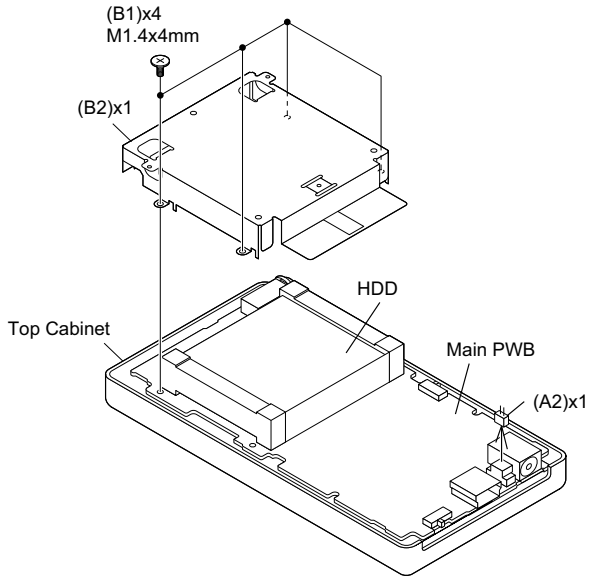
1. Take cassette tape,  and compact disc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need to be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.

| STEP | REMOVAL | PROCEDURE |
|---|---|---|
| 1 | Bottom Cabinet | 1. Screw .....(A1) x5<br>2. Socket .....(A2) x1 |
| 2 | Main PWB | 1. Screw ..... (B1) x4<br>2. HDD Holder .....(B2) x1<br>3. Flexible PWB ..... (B3) x1<br>4. Solder Joints..... (B4) x2<br>5. LCD Shield Case..... (B5) x1<br>6. Solder Joints..... (B6) x35<br>7. LCD Unit .....(B7) x1 |




Note: A special jig is necessary for the installation of the LCD unit.



# CHAPTER 4. DIAGRAMS

## [1] Block diagram

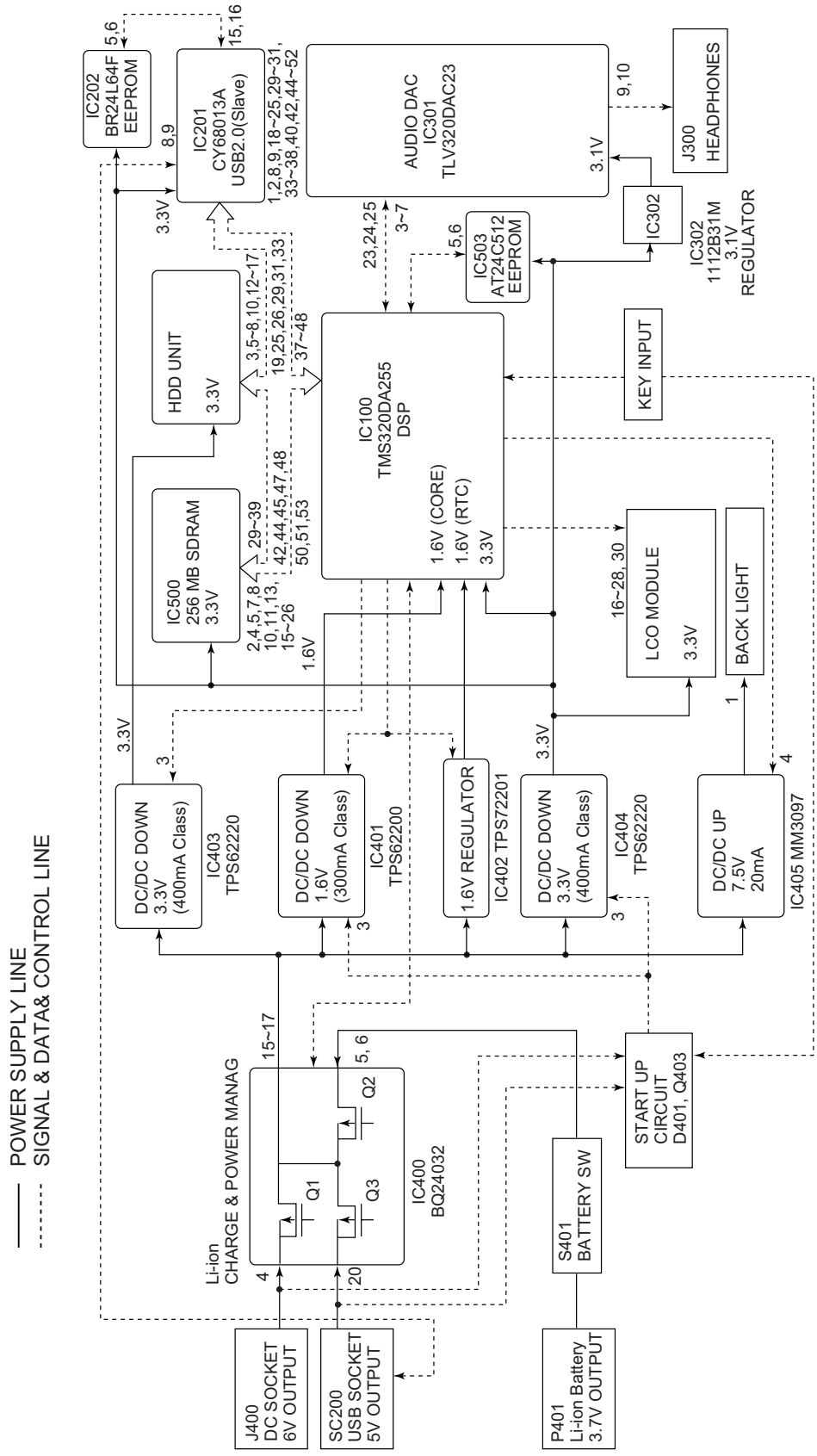



**Figure 4-1 BLOCK DIAGRAM (1/1)**

# CHAPTER 5. CIRCUIT DESCRIPTION

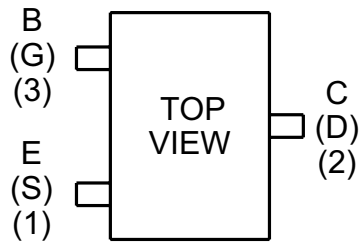
## [1] Notes on schematic diagram

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means pico-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.

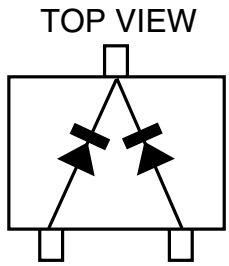
| REF. NO | DESCRIPTION | POSITION |
|---|---|---|
| SW300 | HOLD | ON—OFF |
| SW301 | RETURN/POWER OFF | ON—OFF |
| SW302 | MENU/POWER ON | ON—OFF |
| SW303 | FUNCTION | ON—OFF |

| REF. NO | DESCRIPTION | POSITION |
|---|---|---|
| SW304 | SKIP DOWN/SCROLL LEFT/REVIEW | ON—OFF |
| SW305 | VOLUME UP/SCROLL UP | ON—OFF |
| SW306 | VOLUME DOWN/SCROLL DOWN | ON—OFF |
| SW307 | SKIP UP/SCROLLRIGHT/CUE | ON—OFF |
| SW401 | BATTERY/CUT | ON—OFF |

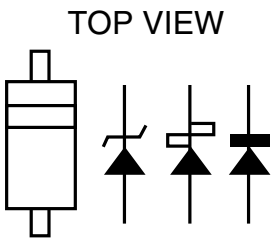
## [2] Types of transistor



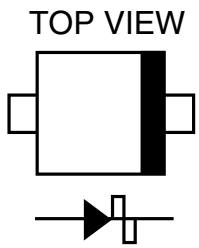

RN1104
RN2104
MCH3405




KDS121 E



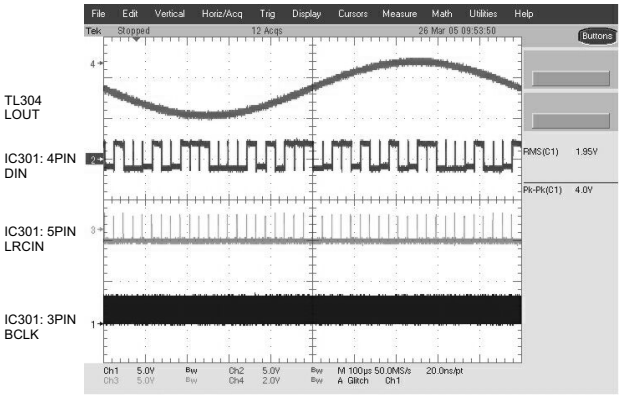

1SS400
RB520530
RB521S30
VDZS33B
VDZS8R2B



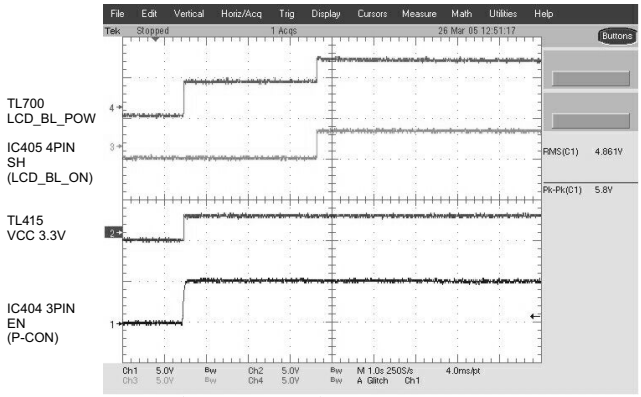

FS1J3TP
RB106M3

## [3] Waveforms of circuit

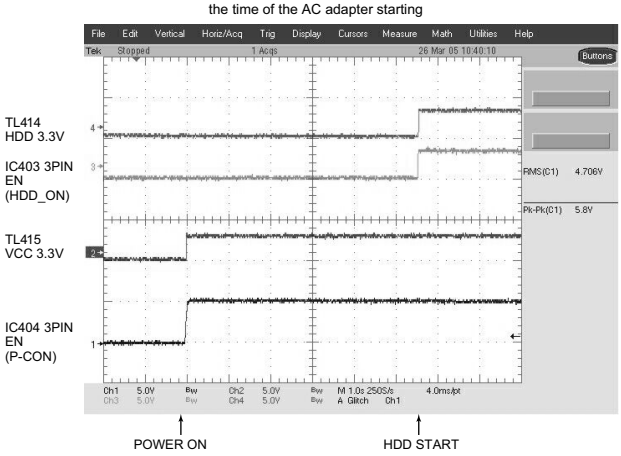
PLAYBACK



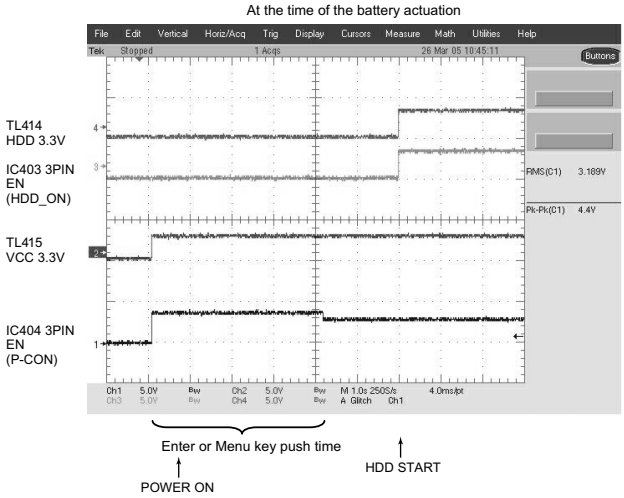

When it is started.




the time of the AC adapter starting




At the time of the battery actuation



## [4] Voltage

VHITLV320D+-1

| IC301 | |
|---|---|
| 1 | 3.1 V |
| 2 | 0 V |
| 3 | P |
| 4 | P |
| 5 | P |
| 6 | 0 |
| 7 | P |
| 8 | 3.1 V |
| 9 | 1.55 V |
| 10 | 1.55 V |
| 11 | 0 V |
| 12 | 1.55 V |
| 13 | 1.55 V |
| 14 | 3.1 V |
| 15 | 0 V |
| 16 | 1.55 V |
| 17 | - |
| 18 | - |
| 19 | - |
| 20 | - |
| 21 | 0 V |
| 22 | 0 V |
| 23 | 3.3 V |
| 24 | 3.3 V |
| 25 | P V |
| 26 | 0 V |
| 27 | 2.7 V |
| 28 | 0 V |

VHIMM3097++-1

| IC405 | |
|---|---|
| 1 | P |
| 2 | 0 V |
| 3 | 0.986 V |
| 4 | 3.3 V |
| 5 | 4.4 V |

VHI80827CNN-1

| IC406 | |
|---|---|
| 1 | 3.1 V |
| 2 | 3.3 V |
| 3 | - |
| 4 | 0 V |

VHITPS72201-1

| IC402 | |
|---|---|
| 1 | 4.4 V |
| 2 | 0 V |
| 3 | 4.4 V |
| 4 | 1.2 V |
| 5 | 1.6 V |

VHITPS62220-1

| IC403,404 | |
|---|---|
| 1 | 4.4 V |
| 2 | 0 V |
| 3 | 4.95 V |
| 4 | 0.485 V |
| 5 | P |

VHITPS62200-1

| IC401 | |
|---|---|
| 1 | 4.4 V |
| 2 | 0 V |
| 3 | 5.1 V |
| 4 | P |
| 5 | 0.5 V |

VHIBQ24032+-1

| IC400 | |
|---|---|
| 1 | 3.35 V |
| 2 | - |
| 3 | 0 V |
| 4 | 5.65 V |
| 5 | 3.45 V |
| 6 | 3.45 V |
| 7 | 5 V |
| 8 | 5.2 V |
| 9 | 4.4 V |
| 10 | 0.25 V |
| 11 | 0 V |
| 12 | 1.5 V |
| 13 | 3.5 V |
| 14 | 2.5 V |
| 15 | 4.4 V |
| 16 | 4.4 V |
| 17 | 4.4 V |
| 18 | 0 V |
| 19 | 0 V |
| 20 | 4.85 V |

VHITC7SZ32U-1

| IC200,502,700 | |
|---|---|
| 1 | P |
| 2 | P |
| 3 | 0 V |
| 4 | P |
| 5 | 3.2 V |

VHIBR24L64F-1

| IC202 | |
|---|---|
| 1 | 3.2 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | P V |
| 6 | P V |
| 7 | 0 V |
| 8 | 3.2 V |

VHIAT24C512-1

| IC503 | |
|---|---|
| 1 | 0 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | P |
| 6 | P |
| 7 | 0 V |
| 8 | 3.2 V |

VHI1112B31M-1

| IC302 | |
|---|---|
| 1 | 3.3 V |
| 2 | 0 V |
| 3 | 3.3 V |
| 4 | - |
| 5 | 3.1 V |

VHICY68013A-1

| IC201 | |
|---|---|
| 1 | P |
| 2 | P |
| 3 | 3.2 V |
| 4 | P |
| 5 | P |
| 6 | 0 V |
| 7 | 3.2 V |
| 8 | P |
| 9 | P |
| 10 | 0 V |
| 11 | 3.2 V |
| 12 | 0 V |
| 13 | P |
| 14 | 0 V |
| 15 | 3.2 V |
| 16 | 3.2 V |
| 17 | 3.2 V |
| 18 | P |
| 19 | P |
| 20 | P |
| 21 | P |
| 22 | P |
| 23 | P |
| 24 | P |
| 25 | P |
| 26 | 0 V |
| 27 | 3.2 V |
| 28 | 0 V |
| 29 | P |
| 30 | P |
| 31 | P |
| 32 | 3.2 V |
| 33 | P |
| 34 | P |
| 35 | P |
| 36 | P |
| 37 | P |
| 38 | P |
| 39 | 3.2 V |
| 40 | P |
| 41 | 0 V |
| 42 | 3.2 V |
| 43 | 3.2 V |
| 44 | 3.2 V |
| 45 | P |
| 46 | P |
| 47 | P |
| 48 | P |
| 49 | P |
| 50 | P |
| 51 | P |
| 52 | P |
| 53 | 0 V |
| 54 | P |
| 55 | 3.2 V |
| 56 | 0 V |

RH-IXB074WJZZ

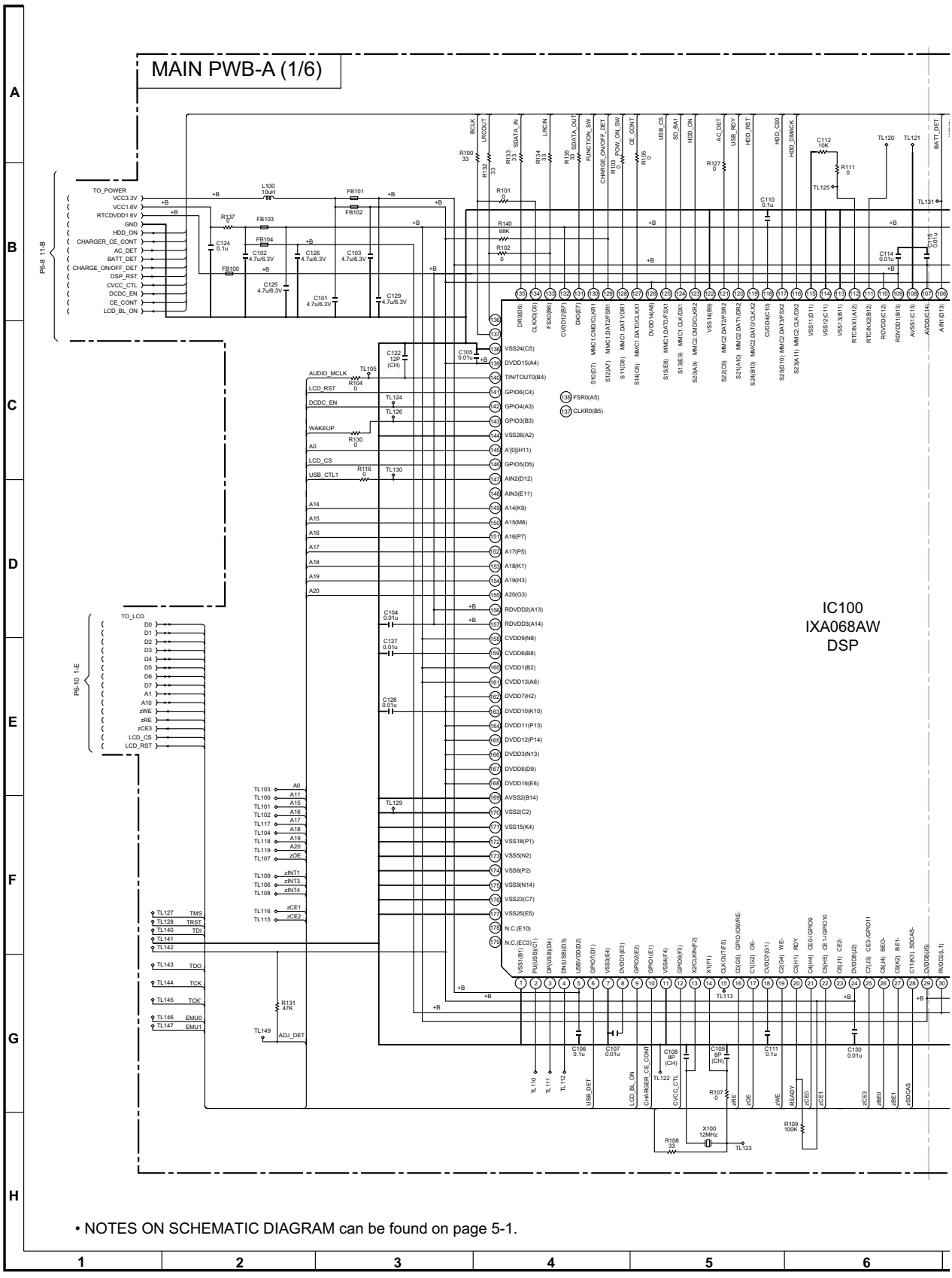
| IC500 | |
|---|---|
| 1 | 3.2 V |
| 2 | P |
| 3 | 3.2 V |
| 4 | P |
| 5 | P |
| 6 | 0 V |
| 7 | P |
| 8 | P |
| 9 | 3.2 V |
| 10 | P |
| 11 | P |
| 12 | 0 V |
| 13 | P |
| 14 | 3.2 V |
| 15 | P |
| 16 | P |
| 17 | P |
| 18 | P |
| 19 | P |
| 20 | P |
| 21 | 0 V |
| 22 | P |
| 23 | P |
| 24 | P |
| 25 | P |
| 26 | P |
| 27 | 3.2 V |
| 28 | 0 |
| 29 | P |
| 30 | P |
| 31 | P |
| 32 | P |
| 33 | P |
| 34 | P |
| 35 | P |
| 36 | P |
| 37 | 3.2 V |
| 38 | P |
| 39 | P |
| 40 | 0 V |
| 41 | 0 V |
| 42 | P |
| 43 | 3.2 V |
| 44 | P |
| 45 | P |
| 46 | 0 V |
| 47 | P |
| 48 | P |
| 49 | 3.2 V |
| 50 | P |
| 51 | P |
| 52 | 0 V |
| 53 | P |
| 54 | 0 V |

* P is a pulse.

— **MEMO** —

# CHAPTER 6. CIRCUIT SCHEMATICS AND PARTS LAYOUT

## [1] Schematic diagram




• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

**Figure 6-1 SCHEMATIC DIAGRAM (1/12)**

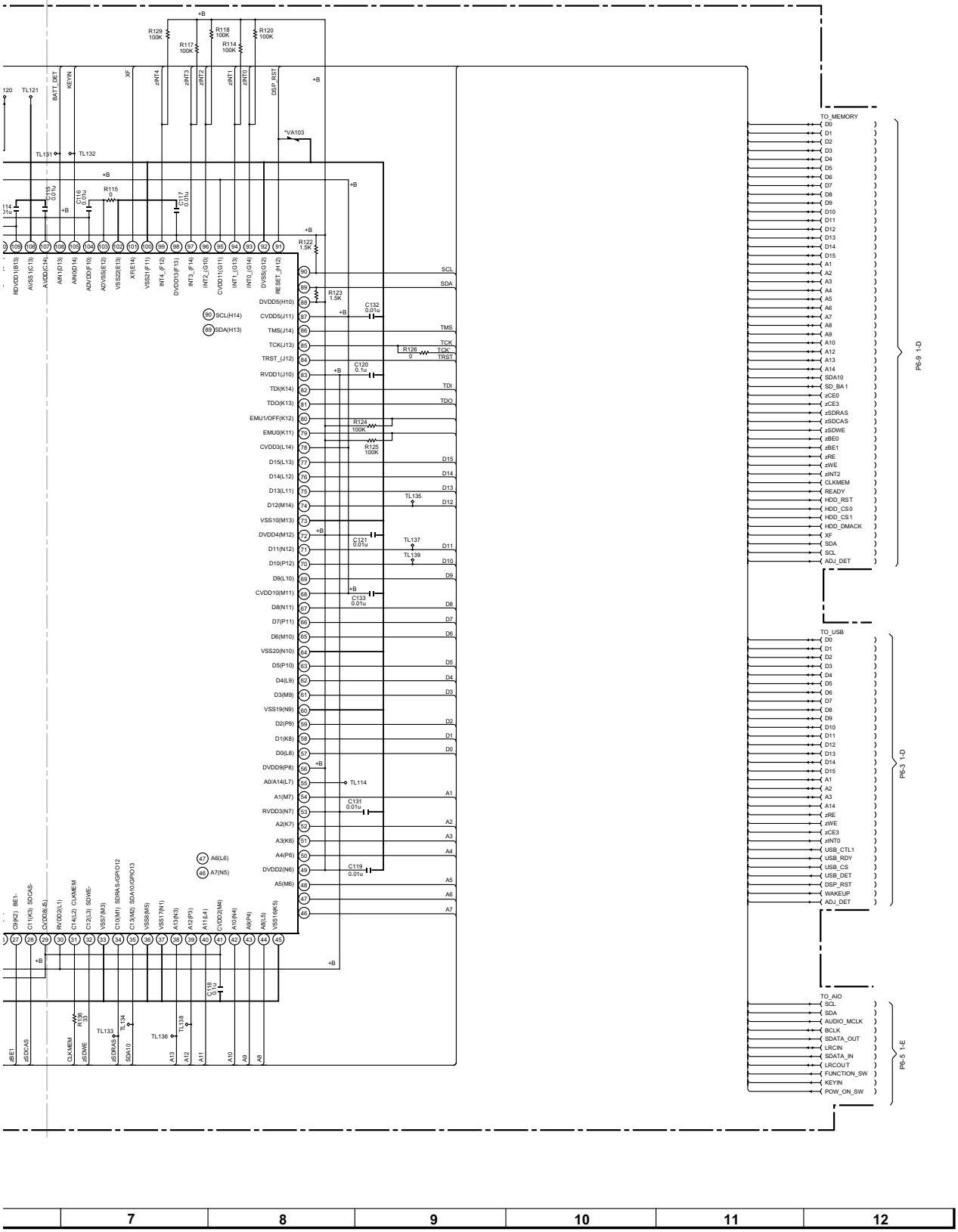
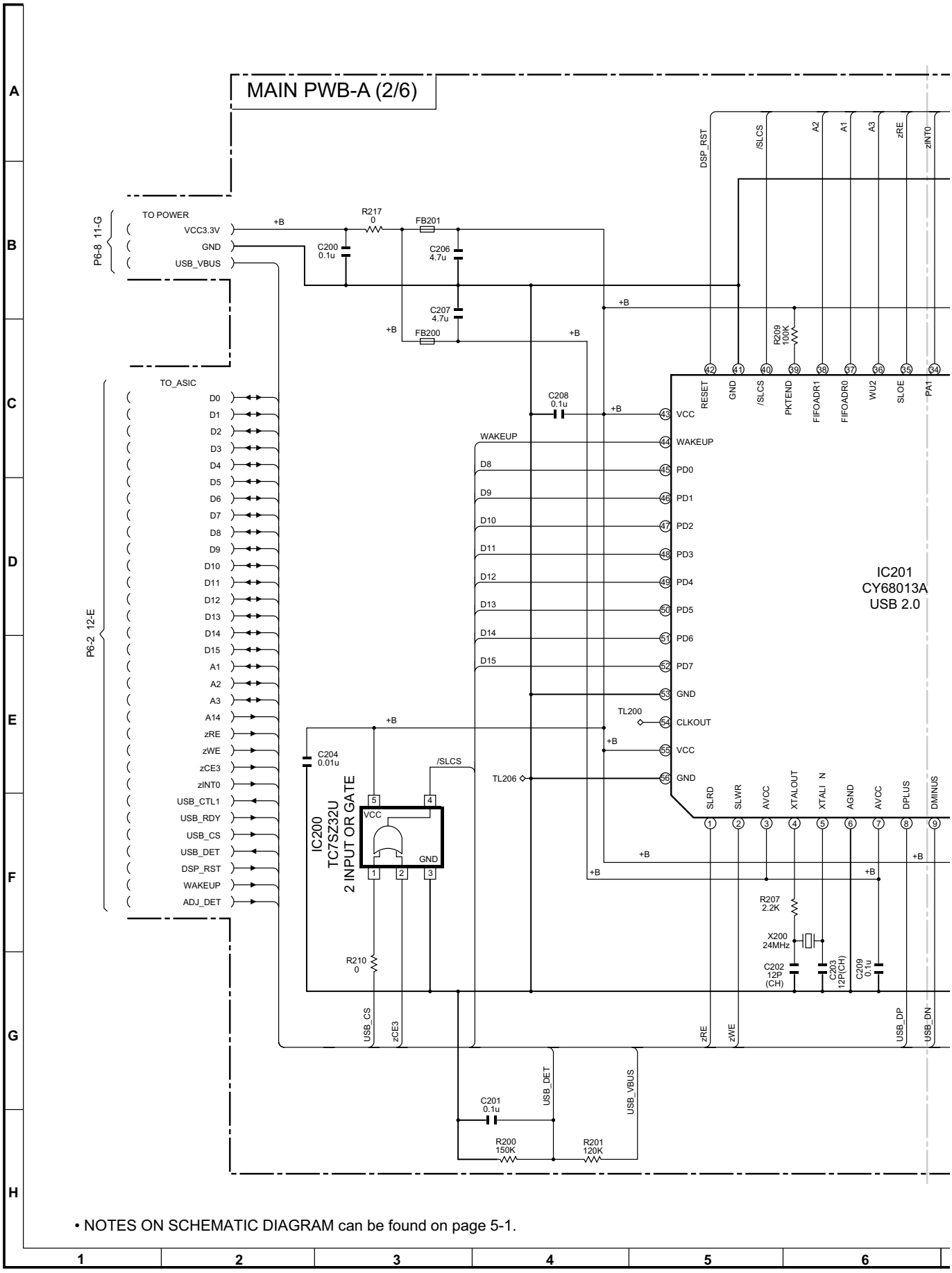
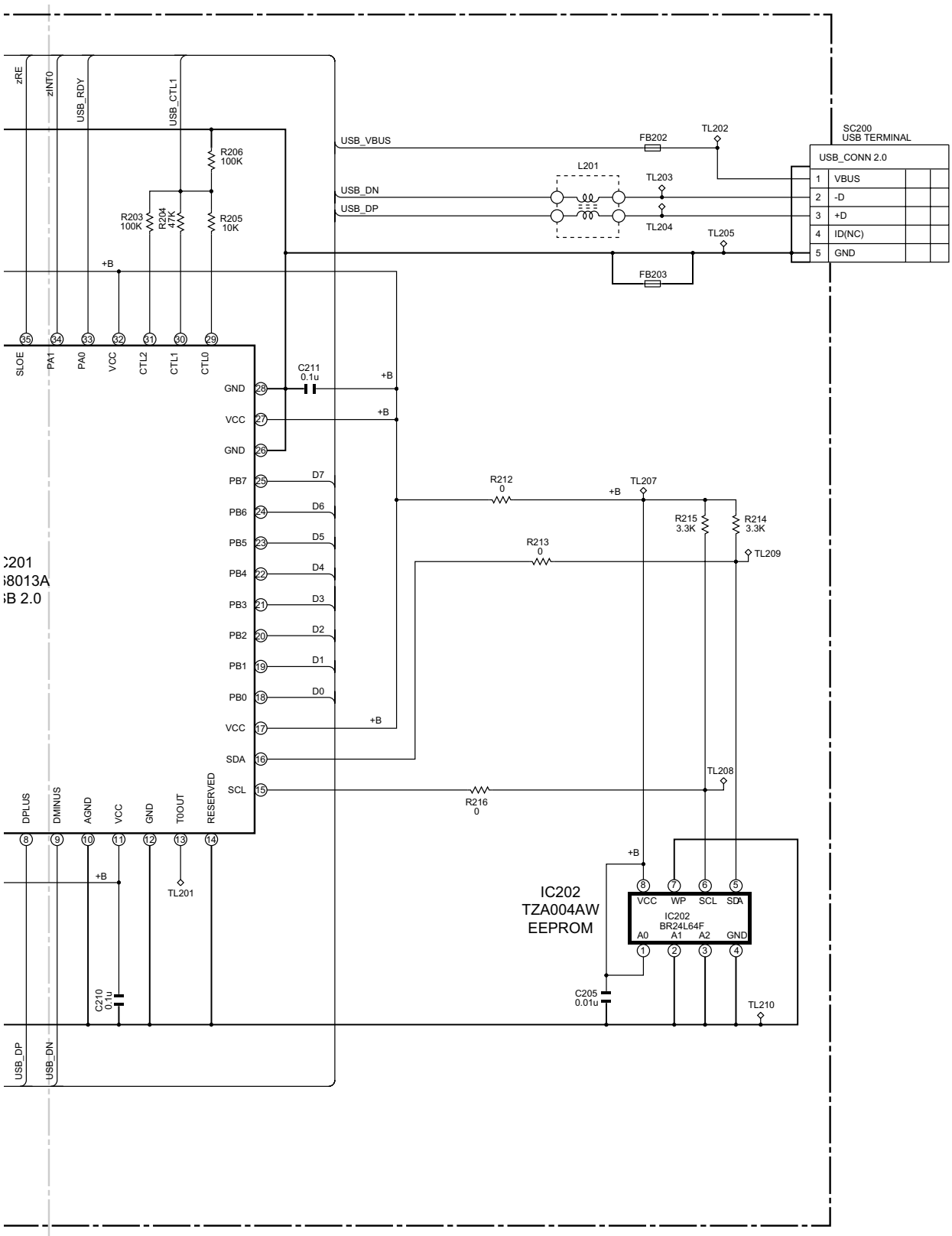



**Figure 6-2 SCHEMATIC DIAGRAM (2/12)**



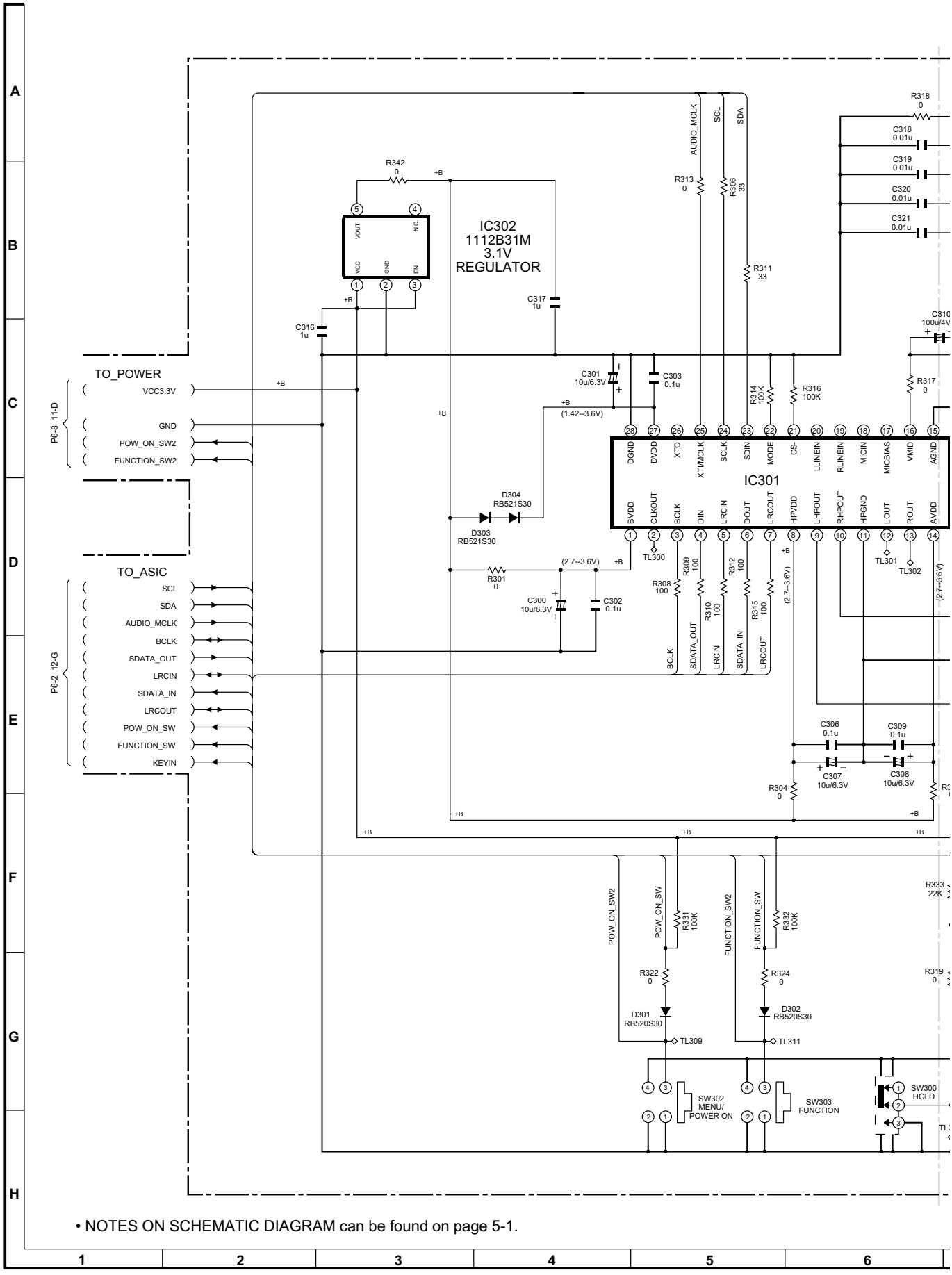

• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

**Figure 6-3 SCHEMATIC DIAGRAM (3/12)**



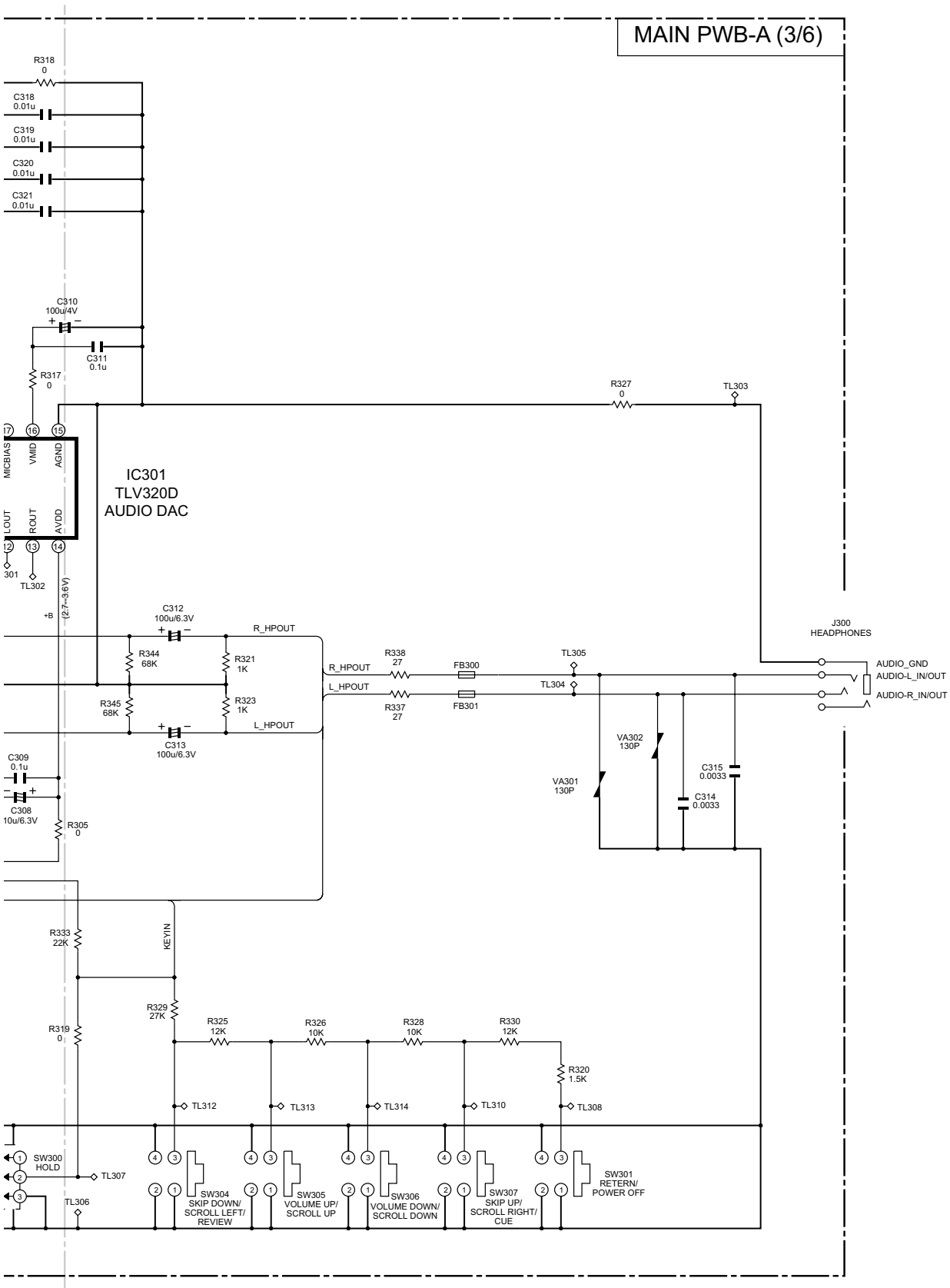

| | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|

**Figure 6-4 SCHEMATIC DIAGRAM (4/12)**




• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

**Figure 6-5 SCHEMATIC DIAGRAM (5/12)**




| | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|

**Figure 6-6 SCHEMATIC DIAGRAM (6/12)**

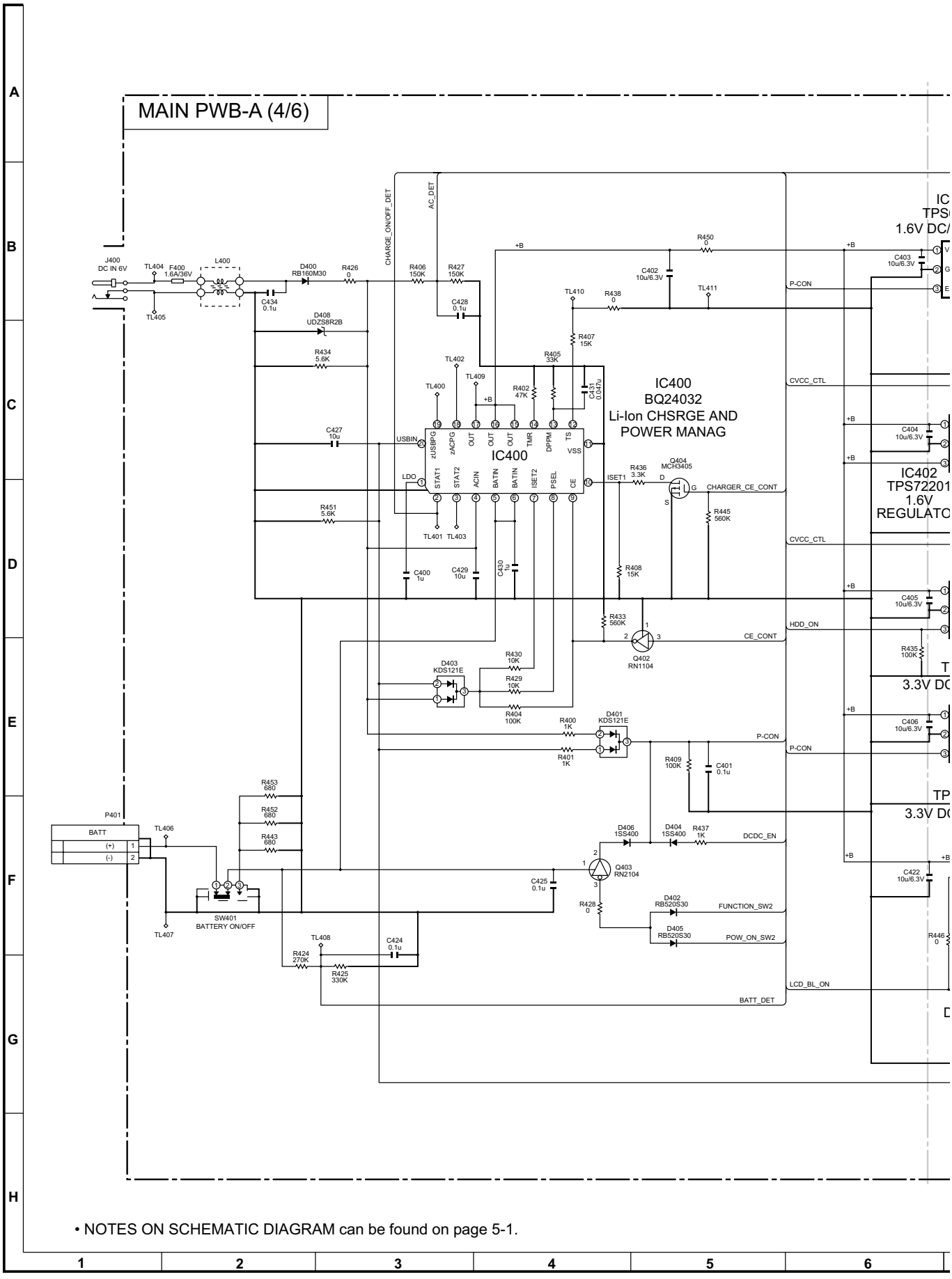
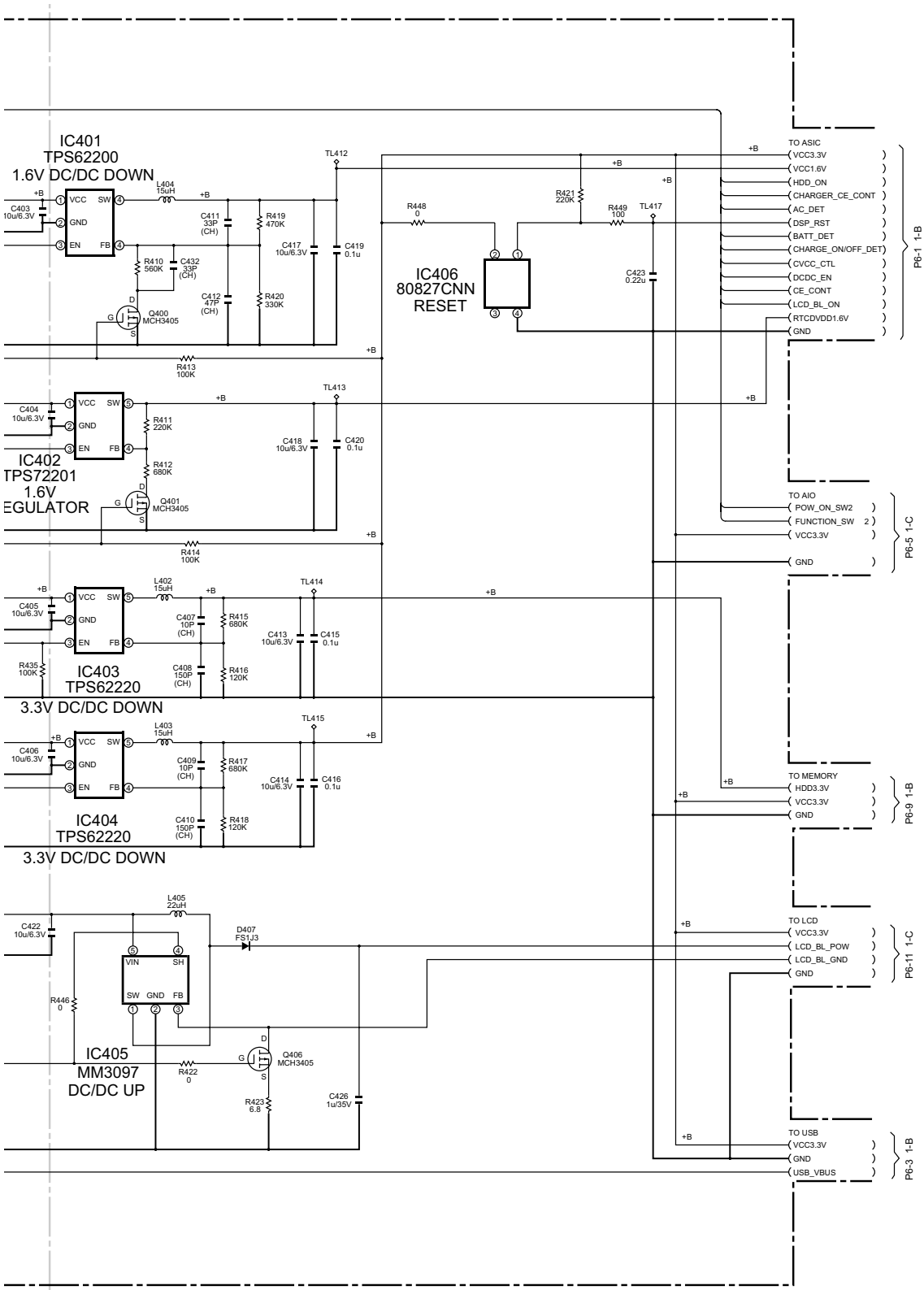



**Figure 6-7 SCHEMATIC DIAGRAM (7/12)**




| | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|

**Figure 6-8 SCHEMATIC DIAGRAM (8/12)**

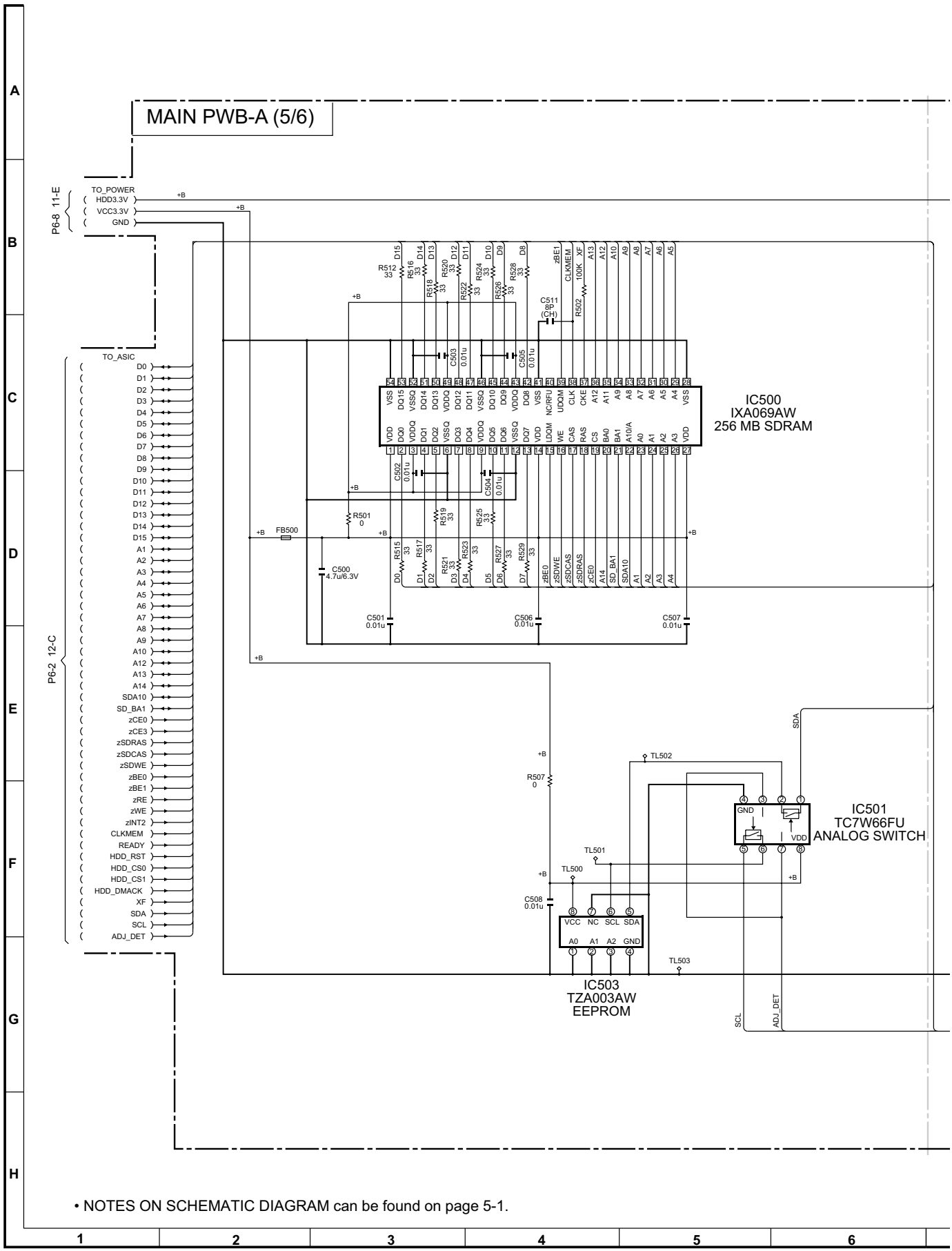
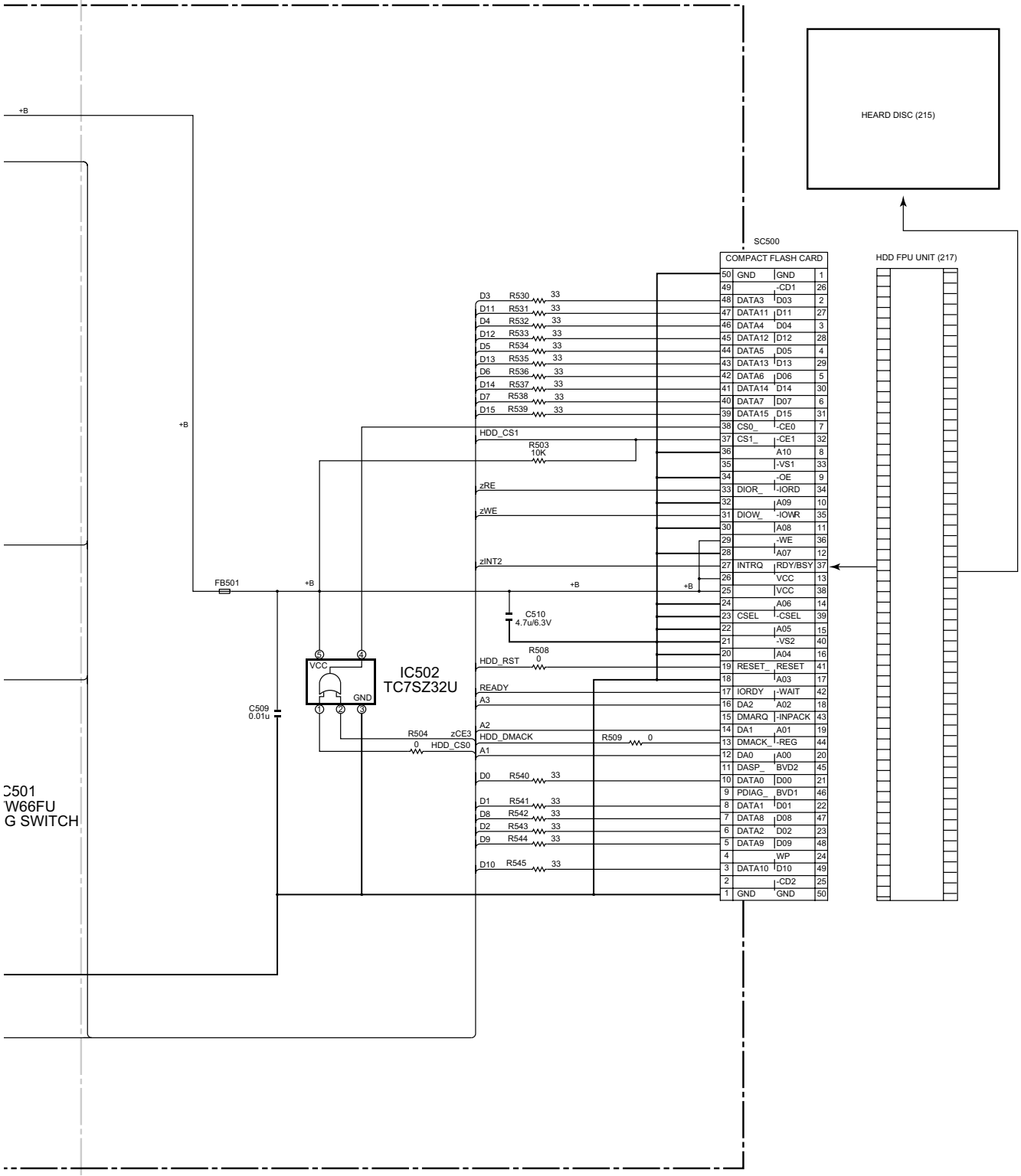
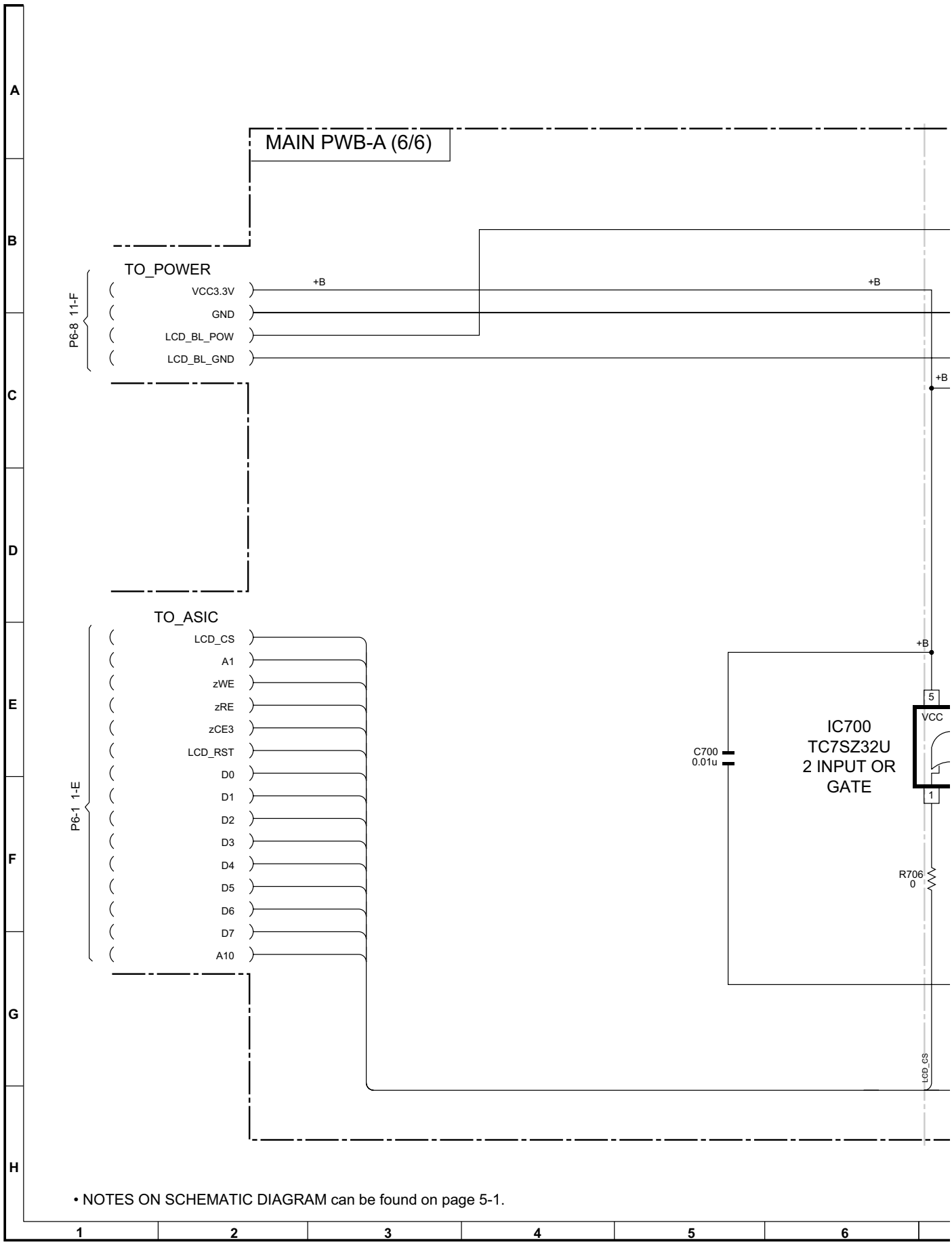



**Figure 6-9 SCHEMATIC DIAGRAM (9/12)**



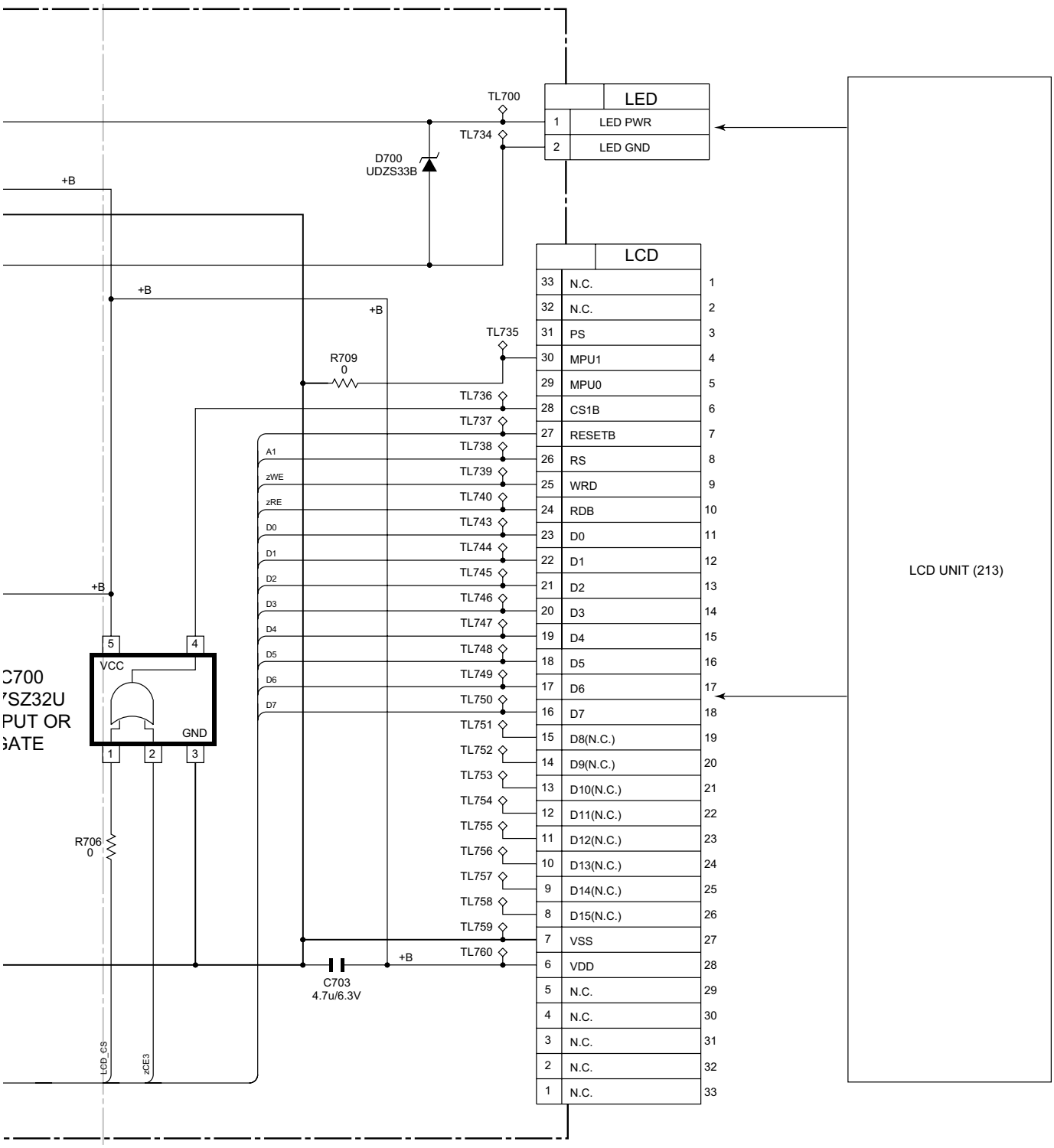

| | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|

**Figure 6-10 SCHEMATIC DIAGRAM (10/12)**




• NOTES ON SCHEMATIC DIAGRAM can be found on page 5-1.

**Figure 6-11 SCHEMATIC DIAGRAM (11/12)**




| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|

**Figure 6-12 SCHEMATIC DIAGRAM (12/12)**

## [2] Wiring side of PWB

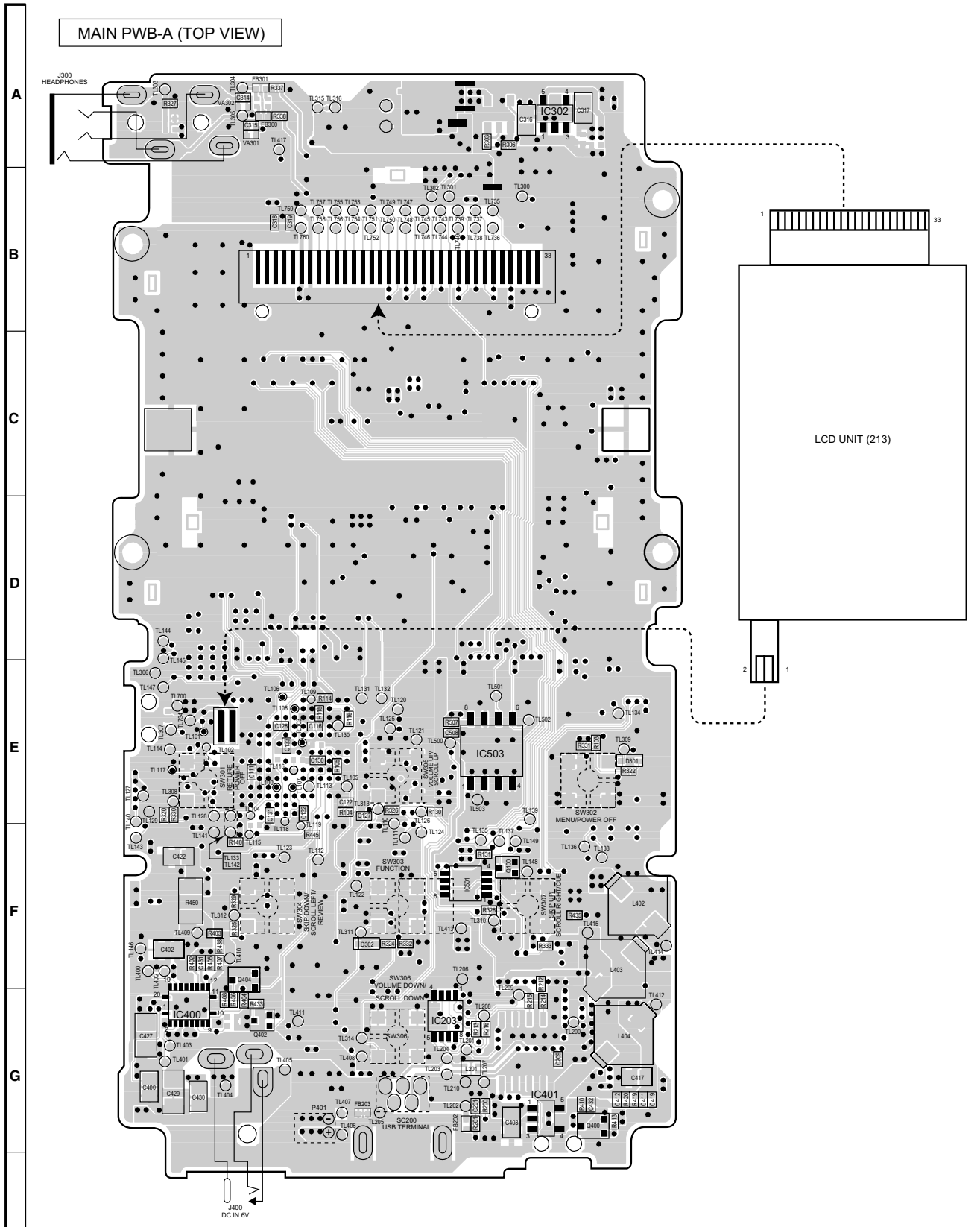
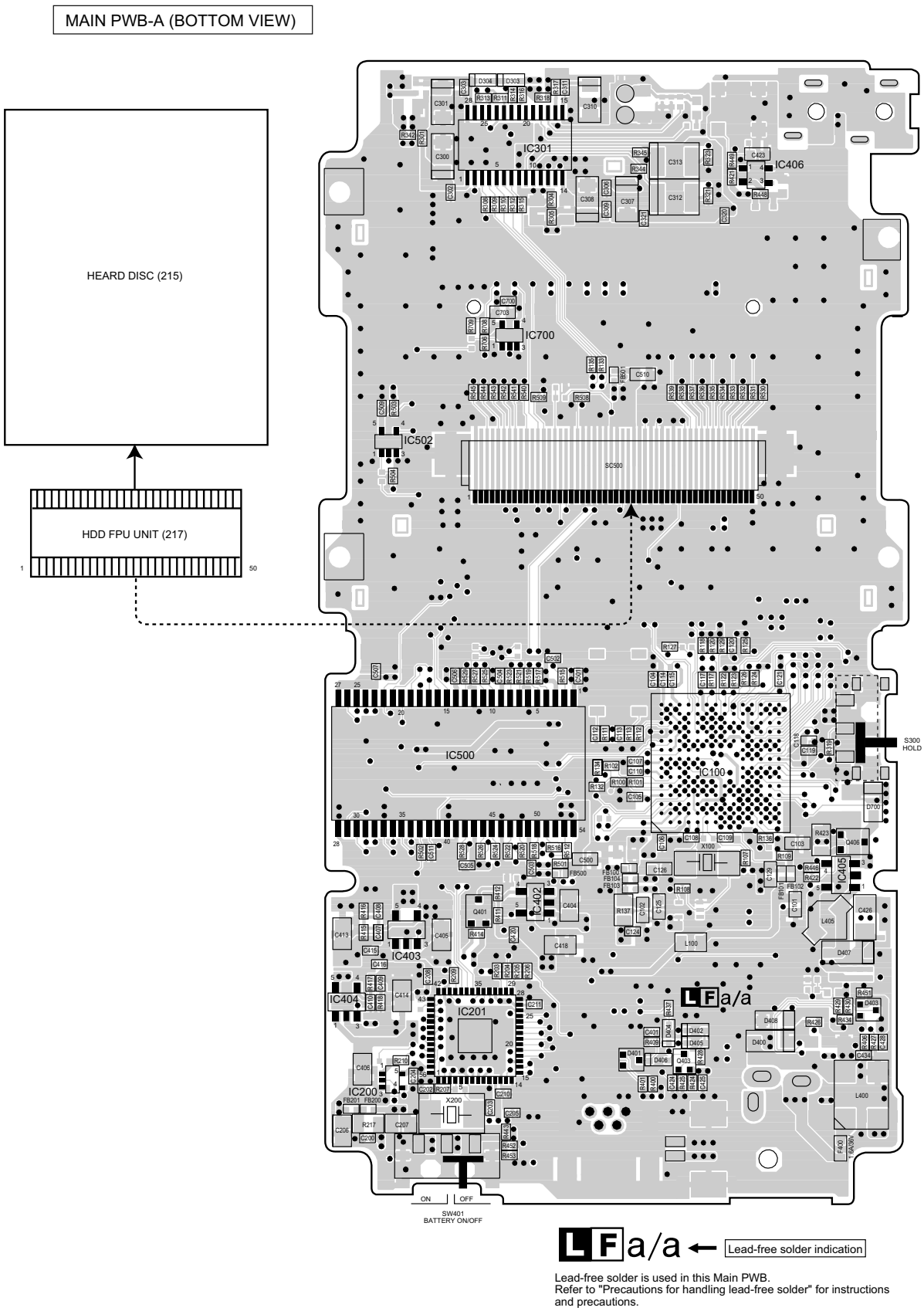



**Figure 6-13 WIRING SIDE OF PWB (1/2)**



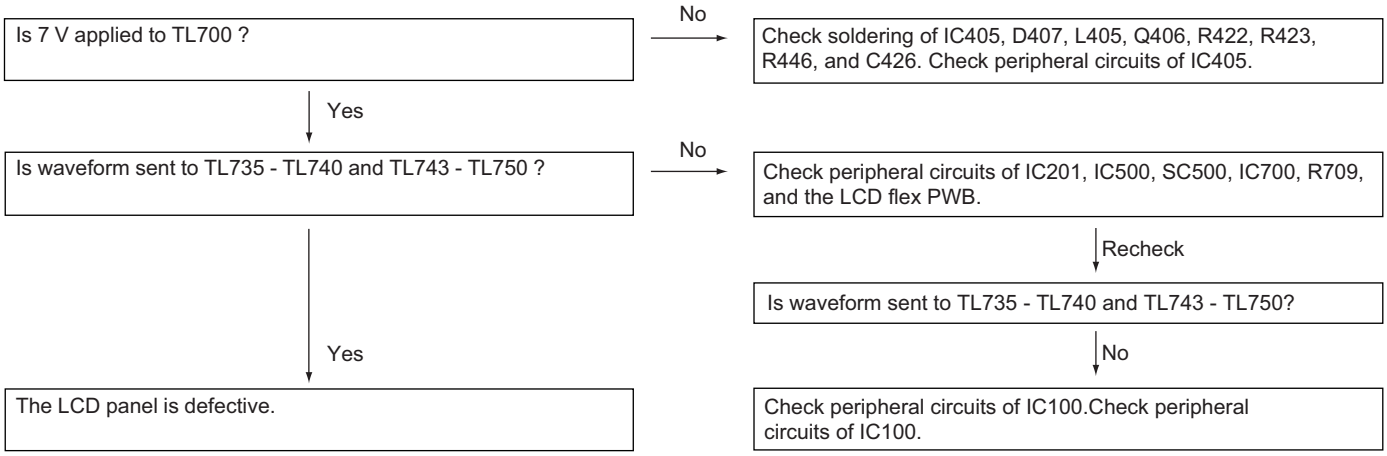

| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|

**Figure 6-14 WIRING SIDE OF PWB (2/2)**

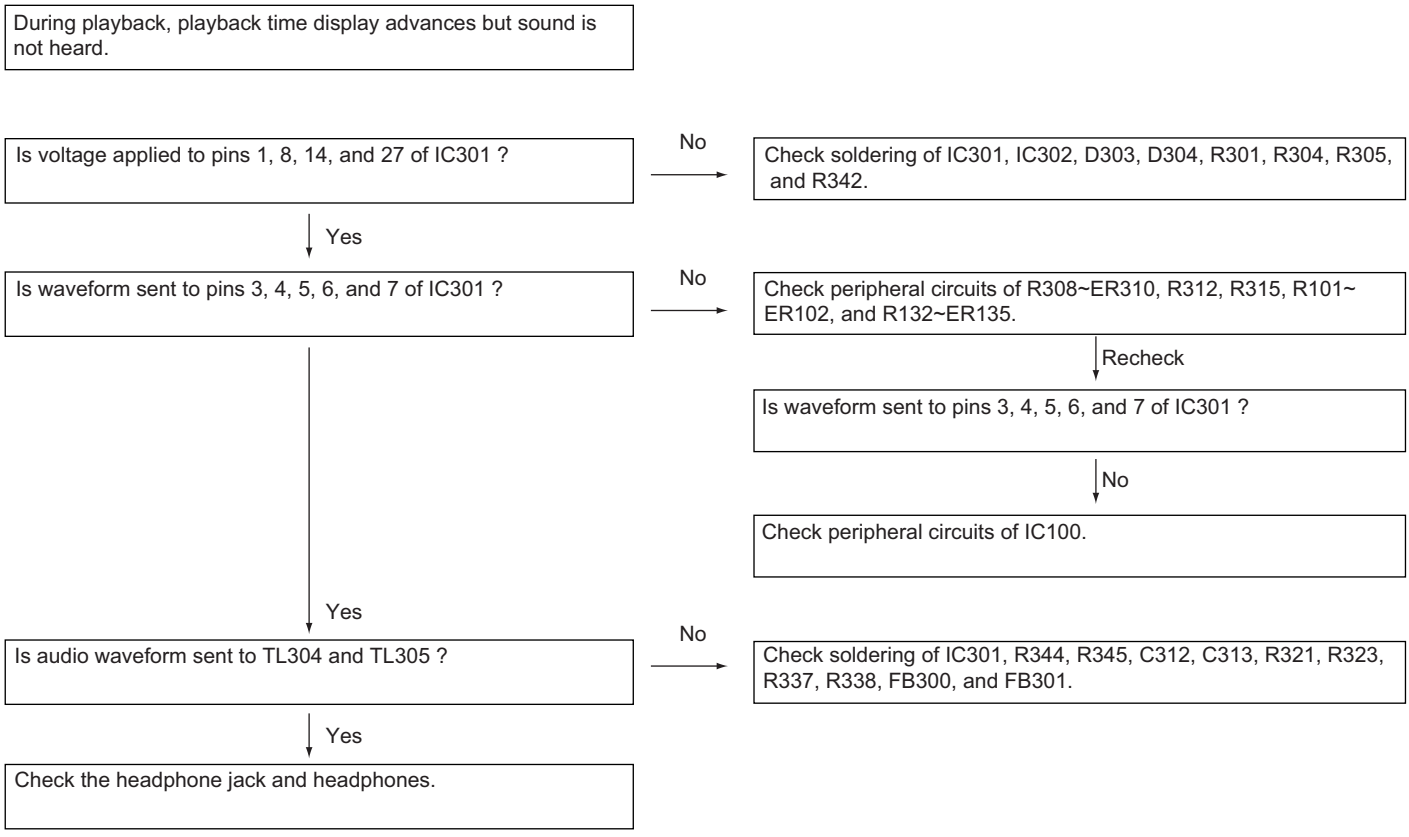
# CHAPTER 7. FLOWCHART

## [1] Troubleshooting

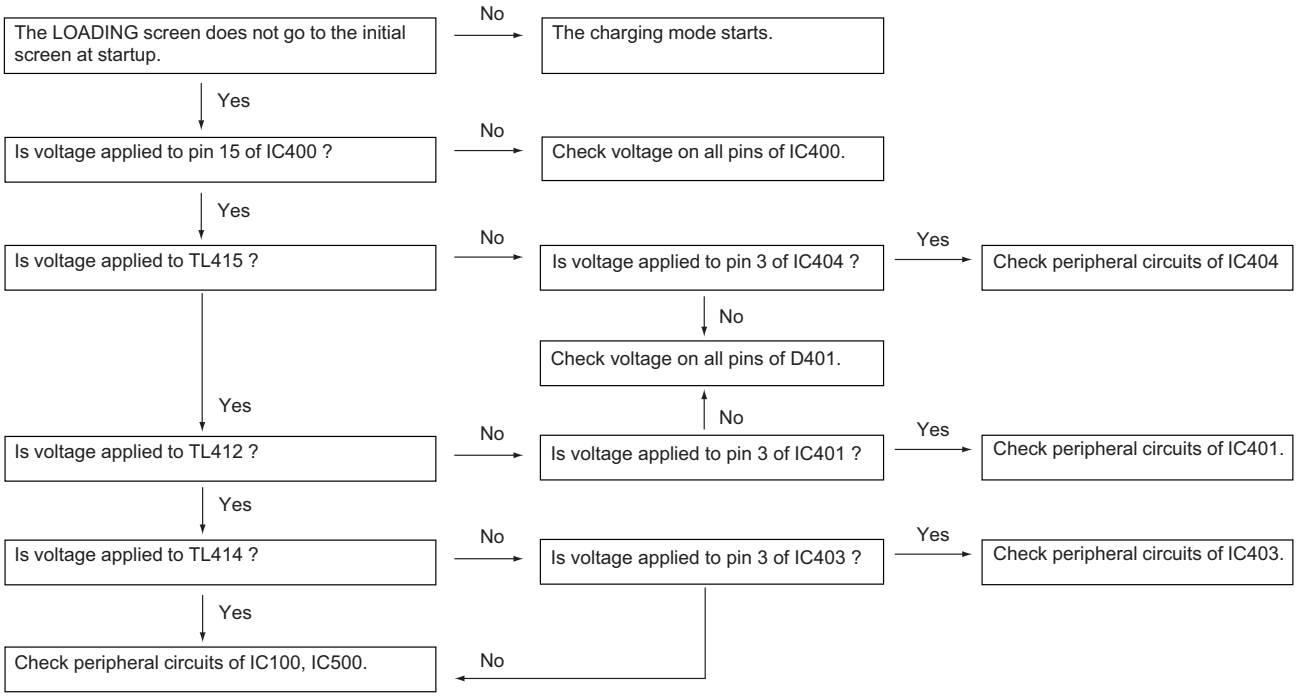
- **Abnormal display**


Is 7 V applied to TL700 ?
No
Check soldering of IC405, D407, L405, Q406, R422, R423, R446, and C426. Check peripheral circuits of IC405.
Yes
Is waveform sent to TL735 - TL740 and TL743 - TL750 ?
No
Check peripheral circuits of IC201, IC500, SC500, IC700, R709, and the LCD flex PWB.
Recheck
Is waveform sent to TL735 - TL740 and TL743 - TL750?
No
Yes
The LCD panel is defective.
Check peripheral circuits of IC100.Check peripheral circuits of IC100.

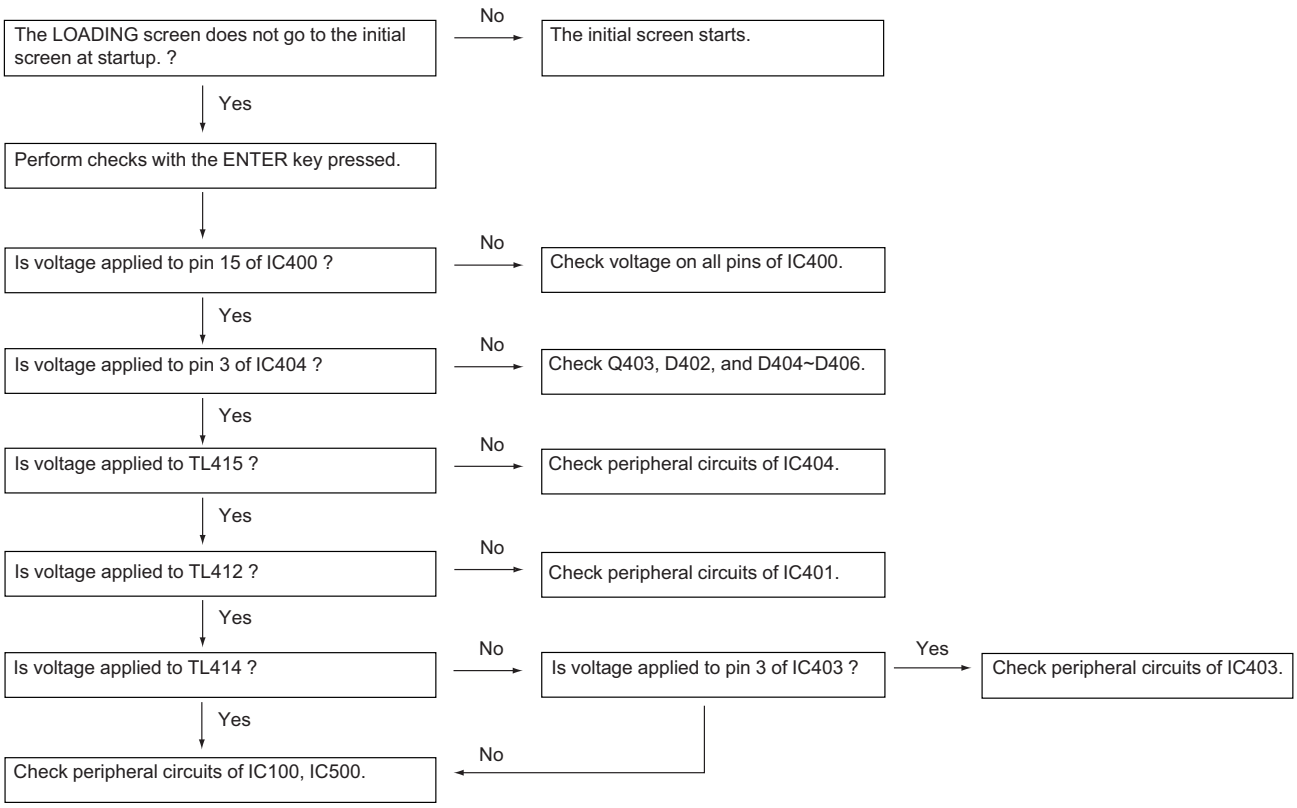
- **Audio playback circuit**


During playback, playback time display advances but sound is not heard.
Is voltage applied to pins 1, 8, 14, and 27 of IC301 ?
No
Check soldering of IC301, IC302, D303, D304, R301, R304, R305, and R342.
Yes
Is waveform sent to pins 3, 4, 5, 6, and 7 of IC301 ?
No
Check peripheral circuits of R308~ER310, R312, R315, R101~ER102, and R132~ER135.
Recheck
Is waveform sent to pins 3, 4, 5, 6, and 7 of IC301 ?
No
Check peripheral circuits of IC100.
Yes
Is audio waveform sent to TL304 and TL305 ?
No
Check soldering of IC301, R344, R345, C312, C313, R321, R323, R337, R338, FB300, and FB301.
Yes
Check the headphone jack and headphones.

● **Startup (AC adaptor)**




● **Startup (battery)**


The LOADING screen does not go to the initial screen at startup. ?
No
The initial screen starts.
Yes
Perform checks with the ENTER key pressed.
Is voltage applied to pin 15 of IC400 ?
No
Check voltage on all pins of IC400.
Yes
Is voltage applied to pin 3 of IC404 ?
No
Check Q403, D402, and D404~D406.
Yes
Is voltage applied to TL415 ?
No
Check peripheral circuits of IC404.
Yes
Is voltage applied to TL412 ?
No
Check peripheral circuits of IC401.
Yes
Is voltage applied to TL414 ?
No
Is voltage applied to pin 3 of IC403 ?
Yes
Check peripheral circuits of IC403.
Yes
Check peripheral circuits of IC100, IC500.
No

# CHAPTER 8. OTHER

## [1] Function table of IC

**IC100 RH-IXA068AWZZ: DSP (IXA068AW) (1/3)**

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---|---|---|---|---|
| 1 | VSS1 | VSS1 | — | GND. |
| 2 | PU | DSP_PU | Output | Reserve. (Checker only) |
| 3 | DP | DSP_DP | Output | Reserve. (Checker only) |
| 4 | DN | DSP_DM | Output | Reserve. (Checker only) |
| 5 | USBVDD | USBVDD | Input | Digital power for USB. (3.3V) |
| 6 | GPIO7 | USB_DET | Input/Output | USB detect. |
| 7 | VSS3 | VSS3 | — | GND. |
| 8 | DVDD1 | DVDD1 | Input | Digital power for interface. (3.3V) |
| 9 | GPIO2 | LCD_BL_ON | Input/Output | LCD backlight control. |
| 10 | GPIO1 | CHARGER_CE_CONT | Input/Output | Charge current control. |
| 11 | VSS4 | VSS4 | — | GND. |
| 12 | GPIO0 | CVCC_CTL | Input | 1.6VREG. control. |
| 13 | X2/CLKIN | X2 | Input | System clock input. (12MHz) |
| 14 | X1 | X1 | Input | System clock output. (12MHz) |
| 15* | CLKOUT | CLKOUT | Input | Master clock output. (Checker only) |
| 16 | C0 | zRE | Output | Data read control. |
| 17 | C1 | zOE | Output | Data read control. |
| 18 | CVDD7 | CVDD7 | Input | Digital power for CPU core. (1.6V) |
| 19 | C2 | zWE | Output | Data write control. |
| 20 | C3 | READY | Output | Chip enable output. |
| 21 | C4 | zCE0 | Output | Chip enable output0. |
| 22 | C5 | zCE1 | Output | Chip enable output1. |
| 23* | C6 | zCE2 | Output | Chip enable output2. |
| 24 | DVDD8 | DVDD8 | Input | Digital power for interface. (3.3V). |
| 25 | C7 | zCE3 | Output | Chip enable output3. |
| 26 | C8 | zBE0 | Output | Byte enable control0. |
| 27 | C9 | zBE1 | Output | Byte enable control1. |
| 28 | C11 | zSDCAS | Output | SDRAM column strobe. |
| 29 | CVDD8 | CVDD8 | Input | Digital power for CPU core. (1.6V) |
| 30 | RVDD2 | RVDD2 | Input | Digital power for CPU core. (1.6V) |
| 31 | C14 | CLKMEM | Output | Interface clock for SDRAM. |
| 32 | C12 | zSDWE | Output | SDRAM write enable. |
| 33 | VSS7 | VSS7 | — | Digital GND. |
| 34 | C10 | zSDRAS | Output | PSDRAM row strobe. |
| 35 | C13 | zSDA10 | Output | SDRAM A10 address. |
| 36 | VSS8 | VSS8 | — | Digital GND. |
| 37 | VSS17 | VSS17 | — | Digital GND. |
| 38 | A13 | A13 | Output | Address bus A13. |
| 39 | A12 | A12 | Output | Address bus A12. |
| 40 | A11 | A11 | Output | Address bus A11. |
| 41 | CVDD2 | CVDD2 | Input | Digital power for CPU core. (1.6V) |
| 42 | A10 | A10 | Output | Address bus A10. |
| 43 | A9 | A9 | Output | Address bus A9. |
| 44 | A8 | A8 | Output | Address bus A8. |
| 45 | VSS16 | VSS16 | — | Digital GND. |
| 46 | A7 | A7 | Output | Address bus A7. |
| 47 | A6 | A6 | Output | Address bus A6. |
| 48 | A5 | A5 | Output | Address bus A5. |
| 49 | DVDD2 | DVDD2 | Input | Digital power for interface. (3.3V) |
| 50 | A4 | A4 | Output | Address bus A4. |
| 51 | A3 | A3 | Output | Address bus A3. |
| 52 | A2 | A2 | Output | Address bus A2. |
| 53 | RVDD3 | RVDD3 | Input | Digital power for CPU core. (1.6V) |
| 54 | A1 | CLAMP SW | Output | Address bus A1. |
| 55* | A0 | A0/A14 | Output | Address bus A0. |
| 56 | DVDD9 | DVDD9 | Input | Digital power for interface. (3.3V) |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC100 RH-IXA068AWZZ: DSP (IXA068AW) (2/3)**

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---|---|---|---|---|
| 57 | D0 | D0 | Input/Output | Data bus D0. |
| 58 | D1 | D1 | Input/Output | Data bus D1. |
| 59 | D2 | D2 | Input/Output | Data bus D2. |
| 60 | VSS19 | VSS19 | — | Digital GND. |
| 61 | D3 | D3 | Input/Output | Data bus D3. |
| 62 | D4 | D4 | Input/Output | Data bus D4 |
| 63 | D5 | D5 | Input/Output | Data bus D5. |
| 64 | VSS20 | VSS20 | — | Digital GND. |
| 65 | D6 | D6 | Input/Output | Data bus D6. |
| 66 | D7 | D7 | Input/Output | Data bus D7. |
| 67 | D8 | D8 | Input/Output | Data bus D8. |
| 68 | CVDD10 | CVDD10 | Input | Digital power for CPU core. (1.6V) |
| 69 | D9 | D9 | Input/Output | Data bus D9. |
| 70 | D10 | D10 | Input/Output | Data bus D10. |
| 71 | D11 | D11 | Input/Output | Data bus D11. |
| 72 | DVDD4 | DVDD4 | Input | Digital power for interface. (3.3V) |
| 73 | VSS10 | VSS10 | — | Digital GND. |
| 74 | D12 | D12 | Input/Output | Data bus D12. |
| 75 | D13 | D13 | Input/Output | Data bus D13. |
| 76 | D14 | D14 | Input/Output | Data bus D14. |
| 77 | D15 | D15 | Input/Output | Data bus D15. |
| 78 | CVDD3 | CVDD3 | Input | Digital power for CPU core. (1.6V) |
| 79 | EMU0 | EMU0 | Input | Emulator 0 pin. |
| 80 | EMU1/#OFF | EMU1 | Input | Emulator 1 pin. |
| 81 | TDO | TDO | Output | IEEE standard 1149.1 test data output. |
| 82 | TDI | TDI | Input | IEEE standard 1149.1 test data input. |
| 83 | RVDD1 | RVDD1 | Input | Digital power for CPU core. (1.6V) |
| 84 | #TRST | TRST | Input | IEEE standard 1149.1 test reset. |
| 85 | TCK | TCK | Input | IEEE standard 1149.1 test clock. |
| 86 | TMS | TMS | Input | IEEE standard 1149.1 test mode select. |
| 87 | CVDD5 | CVDD5 | Input | Digital power for CPU core. (1.6V) |
| 88 | DVDD5 | DVDD5 | Input | Digital power for interface. (3.3V) |
| 89 | SDA | SDA | Input/Output | I2C data output. |
| 90 | SCL | SCL | Input/Output | I2C clock output. |
| 91 | #RESET | DSP_RST | Input | DSP reset. |
| 92 | DVSS | DVSS | — | Digital GND for USBPLL. |
| 93 | #INT0 | zINT0 | Input | Interrupt input 0. |
| 94 | #INT1 | zINT1 | Input | Interrupt input 1. |
| 95 | CVDD11 | CVDD11 | Input | Digital power for USBPLL. (1.6V) |
| 96 | #INT2 | zINT2 | Input | Interrupt input 2. |
| 97 | #INT3 | zINT3 | Input | Interrupt input 3. |
| 98 | DVDD13 | DVDD13 | Input | Digital power for interface. (3.3V) |
| 99 | #INT4 | zINT4 | Input | Interrupt input 4. |
| 100 | VSS21 | VSS21 | — | Digital GND. |
| 101 | XF | XF | Output | |
| 102 | VSS22 | VSS22 | — | Digital GND. |
| 103 | ADVSS | ADVSS | — | Analog digital GND. |
| 104 | ADVDD | ADVDD | Input | Analog digital power. (3.3V) |
| 105 | AIN0 | KEYIN | Input | Key input. |
| 106 | AIN1 | BATT_DET | Input | Battery voltage input. |
| 107 | AVDD | AVDD | Input | Analog power. (3.3V) |
| 108 | AVSS1 | AVSS1 | — | Analog GND. |
| 109 | RDVDD1 | RDVDD1 | Input | Digital power for RTC module interface. (1.6V) |
| 110 | RCVDD | RCVDD | Input | Digital power for RTC module. (1.6V) |
| 111 | RTCINX2 | RTCINX2 | Output | Real time clock input. (Reserve) |
| 112 | RTCINX1 | RTCINX1 | Input | Real time clock output. (Reserve) |
| 113-115 | VSS13-VSS11 | VSS13-VSS11 | — | Digital GND. |
| 116 | S23 | HDD_DMACK | Input/Output | HDD serial clock. |
| 117 | S25 | HDD_CS0 | Input/Output | HDD chip select0. |
| 118 | CVDD4 | CVDD4 | Input | Digital power for CPU core. (1.6V) |
| 119 | S24 | HDD_RST | Input/Output | HDD reset. |
| 120 | S21 | USB_RDY | Input/Output | USB. |

**IC100 RH-IXA068AWZZ: DSP (IXA068AW) (3/3)**

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---|---|---|---|---|
| 121 | S22 | AC_DET | Input/Output | AC adaptor voltage input. |
| 122 | VSS14 | VSS14 | — | Digital GND. |
| 123 | S20 | HDD_ON | Input/Output | HDD power supply control. |
| 124 | S13 | SD_BA1 | Input/Output | SDRAM BA1. |
| 125 | S15 | USB_CS | Input/Output | USB chip select. |
| 126 | DVDD14 | DVDD14 | Input | Digital power for interface. (3.3V) |
| 127 | S14 | POW_ON_SW | Input/Output | Power on SW. |
| 128 | S11 | CE_CONT | Input/Output | Power management IC chip enable. |
| 129 | S12 | CHARGER_ON/ OFF_DET | Input/Output | Charge on/off detect. |
| 130 | S10 | FUNCTION_SW | Input/Output | Function SW. |
| 131 | DX0 | SDATA_OUT | Output | DADATA (Audio data) output. |
| 132 | CVDD12 | CVDD12 | Input | Digital power for CPU core. (1.6V) |
| 133 | FSX0 | LRCIN | Input/Output | LRCK (Audio data) input. |
| 134 | CLKX0 | CLKX0 | Output | Transmit clock input. |
| 135 | DR0 | SDATA_IN | Input | ADDATA (Audio data) output. |
| 136 | FSR0 | LRCOUT | Input/Output | LRCK (Audio data) output. |
| 137 | CLKR0 | BCLK | Output | BCLK(Audio data) output. |
| 138 | VSS24 | VSS24 | — | Digital GND. |
| 139 | DVDD15 | DVDD15 | Input | Digital power for interface.(3.3V) |
| 140 | TIN/TOUT0 | AUDIO_MCLK | Output | Master clock for DAC. |
| 141 | GPIO6 | LCD_RST | Input/Output | LCD reset. |
| 142 | GPIO4 | DCDC_EN | Input/Output | DC-DC converter enable. |
| 143 | GPIO3 | HDD_CS1 | Input/Output | HDD chip select1. |
| 144 | VSS26 | VSS26 | — | Digital GND. |
| 145 | A' [0] | A0 | Output | Address bus A'0. |
| 146 | GPIO5 | LCD_CS | Input/Output | LCD chip select. |
| 147 | AIN2 | USB_CTL1 | Input | USB control1. |
| 148* | AIN3 | AC_DET | Input | AC adaptor voltage input. (Reserve) |
| 149-155 | A14-A20 | A14-A20 | Output | Address bus A14-A20 |
| 156-157 | RDVDD2-RDVDD3 | RDVDD2-RDVDD3 | Input | Digital power for RTC module interface. (1.6V) |
| 158 | CVDD9 | CVDD9 | Input | Digital power for CPU core. (1.6V) |
| 159 | CVDD6 | CVDD6 | Input | Digital power for CPU core. (1.6V) |
| 160 | CVDD1 | CVDD1 | Input | Digital power for CPU core. (1.6V) |
| 161 | CVDD13 | CVDD13 | Input | Digital power for CPU core. (1.6V) |
| 162 | DVDD7 | DVDD7 | Input | Digital power for interface. (3.3V) |
| 163 | DVDD10 | DVDD10 | Input | Digital power for interface. (3.3V) |
| 164 | DVDD11 | DVDD11 | Input | Digital power for interface. (3.3V) |
| 165 | DVDD12 | DVDD12 | Input | Digital power for interface. (3.3V) |
| 166 | DVDD3 | DVDD3 | Input | Digital power for interface. (3.3V) |
| 167 | DVDD6 | DVDD6 | Input | Digital power for interface. (3.3V) |
| 168 | DVDD16 | DVDD16 | Input | Digital power for interface. (3.3V) |
| 169 | AVSS2 | AVSS2 | — | Analog GND. |
| 170 | VSS2 | VSS2 | — | Digital GND. |
| 171 | VSS15 | VSS15 | — | Digital GND. |
| 172 | VSS18 | VSS18 | — | Digital GND. |
| 173 | VSS5 | VSS5 | — | Digital GND. |
| 174 | VSS6 | VSS6 | — | Digital GND. |
| 175 | VSS9 | VSS9 | — | Digital GND. |
| 176 | VSS23 | VSS23 | — | Digital GND. |
| 177 | VSS25 | VSS25 | — | Digital GND. |
| 178* | N.C | N.C. | — | |
| 179* | N.C | N.C. | — | |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC201 VHICY68013A-1: USB (CY68013A) (1/2)**

| Pin No. | Terminal Name | Input/Output | Function |
|---|---|---|---|
| 1 | SLRD | Input | SLRD is the input only read strobe with programmable polarity (FIFOPINPOLAR.3) for the slave FIFOs connected to FD[7..0] or FD[15..0]. |
| 2 | SLWR | Input | SLWR is the input only read strobe with programmable polarity (FIFOPINPOLAR.2) for the slave FIFOs connected to FD[7..0] or FD[15..0]. |
| 3 | AVCC | Input | Analog VCC. |
| 4 | XTALOUT | Output | Crystal output. |
| 5 | XTALIN | Input | Crystal input. |
| 6 | AGND | — | Analog Ground. |
| 7 | AVCC | Input | Analog VCC. |
| 8 | DPLUS | Input/Output | USB D+Signal. |
| 9 | DMINUS | Input/Output | USB D-Signal. |
| 10 | AGND | — | Analog Ground. |
| 11 | VCC | Input | VCC. Connect to 3.3 V power source. |
| 12 | GND | — | Ground. |
| 13* | IFCLK | Output | Interface Clock, used for synchronously clocking data into or out of the slave FIFOs. IFCLK also servers as a timing reference for all slave FIFO control signals and GPIF. When internal clocking is used (IFCONFIG.7 =1) the IFCLK pin can be configured to output 30/48 MHz by bits IFCONFIG.5 and IFCONFIG.6. IFCLK may be inverted, whether internally or externally sourced, by setting the bit IFCONFIG.4 = 1. |
| 14 | Reserved | Input | Reserved. Connect to ground. |
| 15 | SCL | | Clock for the I2C interface. |
| 16 | SDA | | Data for I2C-compatible interface. |
| 17 | VCC | Input/Output | VCC. Connect to 3.3 V power source. |
| 18 | PB0 | Input/Output | PB0 is a bidirectional I/O port pin. |
| 19 | PB1 | Input/Output | PB1 is a bidirectional I/O port pin. |
| 20 | PB2 | Input/Output | PB2 is a bidirectional I/O port pin. |
| 21 | PB3 | Input/Output | PB3 is a bidirectional I/O port pin. |
| 22 | PB4 | Input/Output | PB4 is a bidirectional I/O port pin. |
| 23 | PB5 | Input/Output | PB5 is a bidirectional I/O port pin. |
| 24 | PB6 | Input/Output | PB6 is a bidirectional I/O port pin. |
| 25 | PB7 | Input/Output | PB7 is a bidirectional I/O port pin. |
| 26 | GND | — | Ground. |
| 27 | VCC | Input | VCC. Connect to 3.3 V power source. |
| 28 | GND | — | Ground. |
| 29 | CTL0 | Output | CTL0 is a GPIF control output. |
| 30 | CTL1 | Output | CTL1 is a GPIF control output. |
| 31 | CTL2 | Output | CTL2 is a GPIF control output. |
| 32 | VCC | Input | VCC. Connect to 3.3 V power source. |
| 33 | PA0 | Input | PA0 is bidirectional I/O port pin. |
| 34 | PA1 | Input | PA1 is bidirectional I/O port pin. |
| 35 | SLOE | Input/Output | SOLE is an input only output enable with program-mable polarity (FIFOPINPOLAR.4) for the slave FIFOs connected to FD[7..0] or FD[15..0] |
| 36 | WU2 | Input/Output | WU2 is an alternate source for USB Wakeup, enabled by WU2EN bit (WAKEUP.1) and polarity set by WU2POL (WAKEUP.4).If the 8051 is in suspend and WU2EN = 1, a transition on this pin starts up the oscillator and interrupts the 8051 to allow it to exit the suspend mode. Asserting this pin inhibits the chip from suspending, if WU2EN=1. |
| 37 | FIFOADR0 | Input/Output | FIFOADR0 is an input only address select for the slave FIFOs connected to FD[7..0] or FD[15..0]. |
| 38 | FIFOADR1 | Input/Output | FIFOADR1 is an input only address select for the slave FIFOs connected to FD[7..0] or FD[15..0]. |
| 39 | PKTEND | Input | PKTEND isi an input used to commit the FIFO packet data to the endpoint and whose polarity is program-mable via FIFOPINPOLAR.5. |
| 40 | SLCS# | Input | SLCS# gates all other slave FIFO enable/strobes. |
| 41 | GND | — | Ground. |
| 42 | RESET# | Input | Active low reset. |
| 43 | VCC | Input | VCC. Connect to 3.3 V power source |
| 44 | WAKEUP | Input | USB wakeup. |
| 45 | PD0 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 46 | PD1 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC201 VHICY68013A-1: USB (CY68013A) (2/2)**

| Pin No. | Terminal Name | Input/Output | Function |
|---|---|---|---|
| 47 | PD2 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 48 | PD3 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 49 | PD4 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 50 | PD5 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 51 | PD6 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 52 | PD7 | Input/Output | Multiplexed pin whose function is selected by the IFCONFIG[1..0] and EPxFIFOCFG.0 (wordwids) bits. |
| 53 | GND | — | Ground. |
| 54* | CLKOUT | Output | CLKOUT: 12, 24 or 48 MHz clock. Phase lockes to the 24 MHz input clock. The 8051 defaults to 12 MHz operation. The 8051 may three-state this output by setting CPUCS.1=1. |
| 55 | VCC | Input | VCC. Connect to 3.3 V power source. |
| 56 | GND | — | Ground. |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC301 VHITLV320D+-1:Audio DAC (TLV320D)**

| Pin No. | Terminal Name | Input/Output | Function |
|---|---|---|---|
| 1 | BVDD | Input | Buffer supply input. Voltage range is from 2.7 V to 3.6 V. |
| 2* | CLKOUT | Output | Clock output. this is a buffered version of the XTI input and is available in 1X or 1/2X frequencies of XTI. Frequency selection is controlled by X in control register XX. |
| 3 | BCLK | Input/Output | I2S serial-bit clock. In audio master mode, the DAC23 generates this signal and sends it to the DSP. IN audio slave mode, the signal is generated by the DSP. |
| 4 | DIN | Input | I2S format serial data input to the sigma-delta stereo DAC. |
| 5 | LRCIN | Input/Output | I2S DAC-word clock signal. In audio master mode, the DAC23 generates this framing signal and sends it to the DSP. In audio slave mode, the signal generated by the DSP. |
| 6 | N.C. | — | Not used. |
| 7 | N.C. | — | Not used. |
| 8 | HPVDD | Input | Analog headphone amplifier supply input. Voltage level is 3.3 V nominal. |
| 9 | LHPOUT | Output | Left stereo mixer-channel amplifier headphone output. Nominal 0 dB output level is 1.0 V RMS. Gain of -73 dB to 6 dB is provided in 1 dB steps. |
| 10 | RHPOUT | Output | Right stereo mixer-channel amplifier headphone output. Nominal 0 dB output level is 1.0 V RMS. Gain of -73 dB to 6 dB is provided in 1 dB steps. |
| 11 | HPGND | — | Analog headphone amplifier supply retum. |
| 12* | LOUT | Output | Left stereo mixer-channel line output. nominal output level is 1.0 V RMS. |
| 13* | ROUT | Output | Right stereo mixer-channel line output. nominal output level is 1.0 V RMS. |
| 14 | AVDD | Input | Analog supply input. Voltage level is 3.3 V nominal. |
| 15 | AGND | — | Analog supply retum. |
| 16 | VMID | Input | Midrail voltage decoupling input. 10 uF and 0.1 uF capacitors should be connected in parallel to this terminal for filtering. Voltage level is 1/2 AVDD nominal. |
| 17* | N.C. | — | Not used. |
| 18* | N.C. | — | Not used. |
| 19* | RLINEIN | Input | Right stereo-line input channel. |
| 20* | LLINEIN | Input | Left stereo-line input channel. |
| 21 | CS | Input | Control port input latch/address select. For SPI control mode this input acts as the data latch control. For 2-wire control mode this input defines the seventh bit in the device address field. |
| 22 | MODE | Input | Serial interface mode input. |
| 23 | SDIN | Input | Control port serial data input. For both SP1 and 2-wiew control modes this is the serial clock input and also is used to select the control protocol after reset. |
| 24 | SCLK | Input | Control port serial data clock. For both SP1 and 2-wiew control modes this is the serial clock input. |
| 25 | XTI/MCLK | Input | Crystal or external clock input. Used for derivation of all internal clocks on the DAC23. |
| 26* | XTO | Output | Crystal output. Connect to external cryatal for applications where the DAC23 is audio timing master. Not used in applications where external clock source is used. |
| 27 | DVDD | Input | Digital supply input. Voltage range is 1.4 V to 3.6 V. |
| 28 | DGND | — | Digital supply retum. |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC400 VHIBQ24032+-1: Li-Ion Charge and Power Manag (BQ24032)**

| Pin No. | Terminal Name | Input/Output | Function |
|---|---|---|---|
| 1 | LDO | Output | 3.3 V LDO regulator. |
| 2 | STAT1 | Output | Charge status output1. (open-drain) |
| 3* | STAT2 | Output | Charge status output2. (open-drain). |
| 4 | AC | Input | Changer input voltage from AC adapter. |
| 5, 6 | BAT | Input/Output | Battery input and output. |
| 7 | ISET2 | Input | Charge current set point for USB port. (High = 500 mA, Low = 100mA) For bp24032 see haif charge current mode using ISET2. |
| 8 | PSEL | Input | Power source selection input. (low for USB, high for AC) |
| 9 | CE | Input | Chip enable input. (active high) |
| 10 | ISET1 | Input/Output | Charge current set point for AC input and precharge and taper set point for both AC and USB. |
| 11 | VSS | — | Ground input (the terminal pad on the underside of the package). There is an internal electrical connection between the exposed thermal pad and VSS pin of the device. The exposed thermal pad must be connected to the same potential as the VSS pin on the printed circuit board. Do not used the thermal pad as the primary ground input for the device. VSS pin must be connected to ground at all times. |
| 12 | TS | Input/Output | Temperature sense input. |
| 13 | DPPM | Input | Dynamic power path management set point. (account for scale factor) |
| 14 | TMR | Input/Output | Timer program input. |
| 15~17 | OUT | Output | Output terminal to the system. |
| 18* | ACPG | Output | AC powergood status output. (open-drain) |
| 19* | USBPG | Output | USB powergood status output. (open-drain) |
| 20 | IUSB | Input | USB charge input voltage. |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

**IC500 RH-IXA069AWZZ: 256MB SDRAM (IXA069AW)**

| Pin No. | Terminal Name | Function |
|---|---|---|
| 1 | VDD | Power supply. |
| 2 | DQ0 | Data inputs/outputs are multiplexed on the same pins. |
| 3 | VDDQ | Data output power. |
| 4, 5 | DQ1, DQ2 | Data inputs/outputs are multiplexed on the same pins. |
| 6 | VSSQ | Data output ground. |
| 7, 8 | DQ3, DQ4 | Data inputs/outputs are multiplexed on the same pins. |
| 9 | VDDQ | Data output power. |
| 10, 11 | DQ5, DQ6 | Data inputs/outputs are multiplexed on the same pins. |
| 12 | VSSQ | Data inputs/outputs are multiplexed on the same pins. |
| 13 | DQ7 | Dynamic power path management set point. (account for scale factor) |
| 14 | VDD | Power supply. |
| 15 | LDQM | |
| 16 | WE | Enables write operation and row precharge. Latches data in starting from CAS, WE active. |
| 17 | CAS | Latches column addresses on the positive going edge of the CLK with CAS low. Enables column access. |
| 18 | RAS | Latches roe addresses on the positive going edge of the CLK with RAS low. Enables row access & precharge. |
| 19 | CS | Disables or enables device operation by masking or enabling all inputs except CLK, CKE and DQM. |
| 20, 21 | BA0, BA1 | Selects bank to be activated during row address latch time. Selects bank for read/write during column address latch time. |
| 22 | A10 | Row/column addresses are multiplexed on the same pins. Row address : RA0 - RA12, Column address : CA0-CA8 |
| 23~26 | A0-A3 | Row/column addresses are multiplexed on the same pins. Row address : RA0 - RA12, Column address : CA0-CA8 |
| 27 | VDD | Power supply. |
| 28 | VSS | Ground. |
| 29~34 | A4~A9 | Row/column addresses are multiplexed on the same pins. Row address : RA0 - RA12, Column address : CA0-CA8 |
| 35, 36 | A11, A12 | Row/column addresses are multiplexed on the same pins. Row address : RA0 - RA12, Column address : CA0-CA8 |
| 37 | CKE | Masks system clock to freeze operation from the next xloxk cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in stand-by. |
| 38 | CLK | ctive on the positive going edge to sample all input. |
| 39 | DQM | Makes data output Hi-Z, tSHZ after the clock and makes the output. blocks data input when DQM active. |

**IC500 RH-IXA069AWZZ: 256MB SDRAM (IXA069AW)**

| Pin No. | Terminal Name | Function |
|---|---|---|
| 40* | N.C./RFU | No connection. |
| 41 | VSS | Ground. |
| 42 | DQ8 | Data inputs/outputs are multiplexed on the same pins. |
| 43 | VDDQ | Data output power. |
| 44, 45 | DQ9, DQ10 | Data inputs/outputs are multiplexed on the same pins. |
| 46 | VSSQ | Data output ground. |
| 47, 48 | DQ11, DQ12 | Data inputs/outputs are multiplexed on the same pins. |
| 48 | DQ1, DQ2 | Data inputs/outputs are multiplexed on the same pins. |
| 49 | VDDQ | Data output power. |
| 50, 51 | DQ13, DQ14 | Data inputs/outputs are multiplexed on the same pins. |
| 52 | VSSQ | Data output ground. |
| 53 | DQ15 | Data inputs/outputs are multiplexed on the same pins. |
| 54 | VSS | Ground. |
| 54 | DQ7 | Dynamic power path management set point. (account for scale factor) |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

— **MEMO** —

# SHARP PARTS GUIDE

## PORTABLE JUKEBOX

## MODEL HR-MB3(S)

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Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

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The contents are subject to change without notice.

| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[1] INTEGRATED CIRCUITS** | | | | | |
| iC100 | RH-iXA068AWZZ | BK | | | DSP,IXA068AW |
| iC200 | VHiTC7SZ32U-1 | AD | | | 2 Input or Gate,TC7SZ32U |
| iC201 | VHiCY68013A-1 | BC | | | USB2.0 (Slave),CY68013A |
| iC202 | RUNTZA004AW01 | AK | | | EEPROM,TZA004AW |
| iC301 | VHiTLV320D+-1 | AU | | | Audio DAC,TLV320D |
| iC302 | VHi1112B31M-1 | AD | | | 3.1V Regulator,1112B31M |
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| iC402 | VHiTPS72201-1 | AH | | | 1.6V Regulator,TPS72201 |
| iC403 | VHiTPS62220-1 | AN | | | 3.3V DC/DC Down,TPS62220 |
| iC404 | VHiTPS62220-1 | AN | | | 3.3V DC/DC Down,TPS62220 |
| iC405 | VHiMM3097++-1 | AK | | | 7.5V DC/DC Up,MM3097 |
| iC406 | VHi80827CNN-1 | AD | | | Reset,80827CN |
| iC500 | RH-iXA069AWZZ | BD | | | 256MB SDRAM,IXA069AW |
| iC501 | VHiTC7W66FU-1 | AE | | | Analog Switch,TC7W66FU |
| iC502 | VHiTC7SZ32U-1 | AD | | | 2 Input or Gate,TC7SZ32U |
| iC503 | RUNTZA003AW01 | AV | | | EEPROM,TZA003AW |
| iC700 | VHiTC7SZ32U-1 | AD | | | 2 Input or Gate,TC7SZ32U |
| **[2] TRANSISTORS** | | | | | |
| Q400 | VSMCH3405++-1 | AE | | | N-ch MOS FET,MCH3405 |
| Q401 | VSMCH3405++-1 | AE | | | N-ch MOS FET,MCH3405 |
| Q402 | VSRN1104///-1 | AB | | | Digital,NPN,RN1104 |
| Q403 | VSRN2104+++-1 | AB | | | Digital,PNP,RN2104 |
| Q404 | VSMCH3405++-1 | AE | | | N-ch MOS FET,MCH3405 |
| Q406 | VSMCH3405++-1 | AE | | | N-ch MOS FET,MCH3405 |
| **[3] DIODES** | | | | | |
| D301 | VHDRB520S30-1 | AC | | | Schottky,RB520S30 |
| D302 | VHDRB520S30-1 | AC | | | Schottky,RB520S30 |
| D303 | VHDRB521S30-1 | AC | | | Schottky,RB521S30 |
| D304 | VHDRB521S30-1 | AC | | | Schottky,RB521S30 |
| D400 | VHDRB160M3+-1 | AD | | | Schottky,RB160M3 |
| D401 | VHDKDS121E+-1 | AC | | | Silicon,KDS121E |
| D402 | VHDRB520S30-1 | AC | | | Schottky,RB520S30 |
| D403 | VHDKDS121E+-1 | AC | | | Silicon,KDS121E |
| D404 | VHD1SS400//-1 | AB | | | Silicon,1SS400 |
| D405 | VHDRB520S30-1 | AC | | | Schottky,RB520S30 |
| D406 | VHD1SS400//-1 | AB | | | Silicon,1SS400 |
| D407 | VHDFS1J3TP+-1 | AE | | | Schottky,FS1J3TP |
| D408 | VHEUDZS8R2B-1 | AC | | | Zener,8.2V,UDZS8.2B |
| D700 | VHEUDZS33B+-1 | AC | | | Zener,33V,UDZS33B |
| **[4] COILS** | | | | | |
| FB100 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB101 | RCiLCA009AWZZ | AB | | | Coil |
| FB102 | RCiLCA009AWZZ | AB | | | Coil |
| FB103 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB104 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB200 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB201 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB202 | RCiLCA013AWZZ | AD | | | Chip Beads Inductor |
| FB203 | RCiLCA013AWZZ | AD | | | Chip Beads Inductor |
| FB300 | RCiLCA018AWZZ | AB | | | Coil |
| FB301 | RCiLCA018AWZZ | AB | | | Coil |
| FB500 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| FB501 | RCiLCA015AWZZ | AB | | | Ferrite Beads |
| L100 | VPCEM100M0R7N | AC | | | Coil,10 μH |
| L201 | RCiLFA001AWZZ | AF | | | Coil |
| L400 | RCiLFA002AWZZ | AL | | | Coil |
| L402 | RCiLCA011AWZZ | AE | | | Coil,15 μH |
| L403 | RCiLCA011AWZZ | AE | | | Coil,15 μH |
| L404 | RCiLCA011AWZZ | AE | | | Coil,15 μH |
| L405 | RCiLCA014AWZZ | AE | | | Coil,22 μH |
| **[5] VARIABLE CAPACITORS** | | | | | |
| VA301 | VHV10120MAB-1 | AB | | | Variable Capacitors,130 pF |
| VA302 | VHV10120MAB-1 | AB | | | Variable Capacitors,130 pF |
| **[6] VIBRATORS** | | | | | |
| X100 | RCRSCA007AWZZ | AH | | | Crystal,12 MHz |
| X200 | RCRSCA009AWZZ | AH | | | Crystal,24 MHz |
| **[7] CAPACITORS** | | | | | |
| C101 | RC-KZ0013AWZZ | AC | | | 4.7 μF,6.3V |
| C102 | RC-KZ0013AWZZ | AC | | | 4.7 μF,6.3V |
| C103 | RC-KZ0013AWZZ | AC | | | 4.7 μF,6.3V |
| C104 | VCKYCZ1CB103K | AB | | | 0.01 μF,16V |
| C105 | VCKYCZ1CB103K | AB | | | 0.01 μF,16V |
| C106 | VCKYCZ1AB104K | AB | | | 0.1 μF,10V |
| C107 | VCKYCZ1CB103K | AB | | | 0.01 μF,16V |
| C108 | VCCCCZ1HH8R0D | AB | | | 8 pF (CH),50V |
| C109 | VCCCCZ1HH8R0D | AB | | | 8 pF (CH),50V |
| C110 | VCKYCZ1AB104K | AB | | | 0.1 μF,10V |

| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[7] CAPACITORS** | | | | | |
| C111 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C112 | VRS-CZ1JB103J | AA | | | 10 kohm,1/16W |
| C114 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C115 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C116 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C117 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C118 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C119 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C120 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C121 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C122 | VCCCCZ1HH120J | AA | | | 12 pF (CH),50V |
| C124 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C125 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| C126 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| C127 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C128 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C129 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| C130 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C131 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C132 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C133 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C200 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C201 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C202 | VCCCCZ1HH120J | AA | | | 12 pF (CH),50V |
| C203 | VCCCCZ1HH120J | AA | | | 12 pF (CH),50V |
| C204 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C205 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C206 | VCKYTV1AB475K | AC | | | 4.7 μ F,10V |
| C207 | VCKYTV1AB475K | AC | | | 4.7 μ F,10V |
| C208 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C209 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C210 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C211 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C300 | VCSATA0JJ106M | AD | | | 10 μ F,6.3V,Electrolytic,Tantalum |
| C301 | VCSATA0JJ106M | AD | | | 10 μ F,6.3V,Electrolytic,Tantalum |
| C302 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C303 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C306 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C307 | VCSATA0JJ106M | AD | | | 10 μ F,6.3V,Electrolytic,Tantalum |
| C308 | VCSATA0JJ106M | AD | | | 10 μ F,6.3V,Electrolytic,Tantalum |
| C309 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C310 | VCSATA0GJ107M | | | | 100 μ F,4V,Electrolytic,Tantalum |
| C311 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C312 | VCSATE0JJ107M | AE | | | 100 μ F,6.3V,Electrolytic,Tantalum |
| C313 | VCSATE0JJ107M | AE | | | 100 μ F,6.3V,Electrolytic,Tantalum |
| C314 | VCKYCZ1HB332K | AA | | | 0.0033 μ F,50V |
| C315 | VCKYCZ1HB332K | AA | | | 0.0033 μ F,50V |
| C316 | VCKYTV1AB105K | AD | | | 1 μ F,10V |
| C317 | VCKYTV1AB105K | AD | | | 1 μ F,10V |
| C318 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C319 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C320 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C321 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C400 | VCKYTV1AB105K | AD | | | 1 μ F,10V |
| C401 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C402 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C403 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C404 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C405 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C406 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C407 | VCCCCZ1HH100D | AA | | | 10 pF (CH),50V |
| C408 | VCCCCZ1HH151J | AB | | | 150 pF (CH),50V |
| C409 | VCCCCZ1HH100D | AA | | | 10 pF (CH),50V |
| C410 | VCCCCZ1HH151J | AB | | | 150 pF (CH),50V |
| C411 | VCCCCZ1HH330J | AB | | | 33 pF (CH),50V |
| C412 | VCCCCZ1HH470J | AB | | | 47 pF (CH),50V |
| C413 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C414 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C415 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C416 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C417 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C418 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C419 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C420 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C422 | RC-KZ0014AWZZ | AD | | | 10 μ F,6.3V |
| C423 | VCKYCY1AB224K | AB | | | 0.22 μ F,10V |
| C424 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C425 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C426 | RC-KZ3021AWZZ | AC | | | 1 μ F,35V |
| C427 | RC-KZ3017AWZZ | AD | | | 10 μ F,16V |
| C428 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C429 | RC-KZ3017AWZZ | AD | | | 10 μ F,16V |
| C430 | VCKYTV1AB105K | AD | | | 1 μ F,10V |
| C431 | VCKYCZ1AB473K | AB | | | 0.047 μ F,10V |
| C432 | VCCCCZ1HH330J | AB | | | 33 pF (CH),50V |

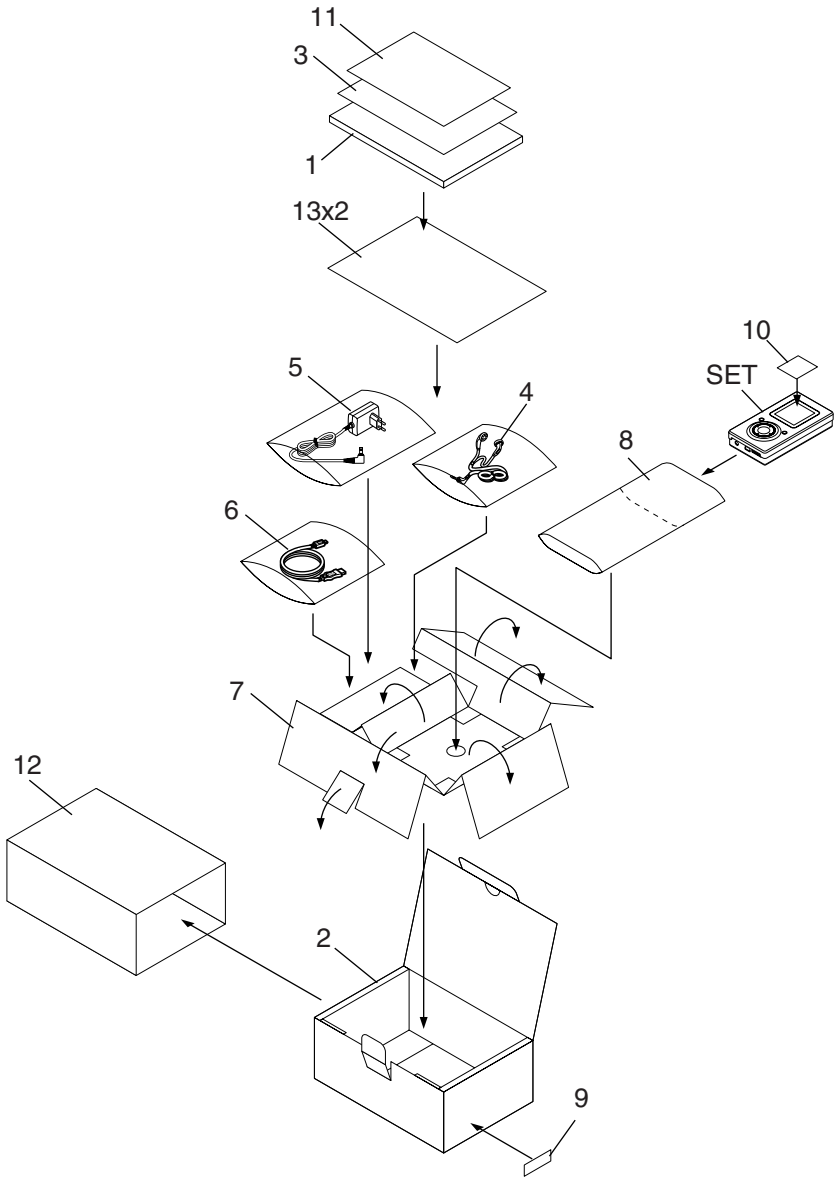
| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[7] CAPACITORS** | | | | | |
| C434 | VCKYCZ1AB104K | AB | | | 0.1 μ F,10V |
| C500 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| C501 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C502 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C503 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C504 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C505 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C506 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C507 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C508 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C509 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C510 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| C511 | VCCCCZ1HH8R0D | AB | | | 8 pF (CH),50V |
| C700 | VCKYCZ1CB103K | AB | | | 0.01 μ F,16V |
| C703 | RC-KZ0013AWZZ | AC | | | 4.7 μ F,6.3V |
| **[8] RESISTORS** | | | | | |
| R100 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R101 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R102 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R103 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R104 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R105 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R107 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R108 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R109 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R111 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R114 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R115 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R116 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R117 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R118 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R120 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R122 | VRS-CZ1JB152J | AB | | | 1.5 kohms,1/16W |
| R123 | VRS-CZ1JB152J | AB | | | 1.5 kohms,1/16W |
| R124 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R125 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R126 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R127 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R129 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R130 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R131 | VRS-CZ1JB473J | AA | | | 47 kohms,1/16W |
| R132 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R133 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R134 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R135 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R136 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R137 | VRS-TV2AB000J | AA | | | 0 ohm,Jumper,1.25x2mm,Green |
| R140 | VRS-CZ1JB683J | AB | | | 68 kohms,1/16W |
| R200 | VRS-CZ1JB154J | AA | | | 150 kohms,1/16W |
| R201 | VRS-CZ1JB124J | AB | | | 120 kohms,1/16W |
| R203 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R204 | VRS-CZ1JB473J | AA | | | 47 kohms,1/16W |
| R205 | VRS-CZ1JB103J | AA | | | 10 kohm,1/16W |
| R206 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R207 | VRS-CZ1JB222J | AB | | | 2.2 kohms,1/16W |
| R209 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R210 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R212 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R213 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R214 | VRS-CZ1JB332J | AB | | | 3.3 kohms,1/16W |
| R215 | VRS-CZ1JB332J | AB | | | 3.3 kohms,1/16W |
| R216 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R217 | VRS-TV2AB000J | AA | | | 0 ohm,Jumper,1.25x2mm,Green |
| R301 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R304 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R305 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R306 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R308 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R309 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R310 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R311 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R312 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R313 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R314 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R315 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R316 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R317 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R318 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R319 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R320 | VRS-CZ1JB152D | AA | | | 1.5 kohms,1/16W |
| R321 | VRS-CZ1JB102J | AB | | | 1 kohm,1/16W |
| R322 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R323 | VRS-CZ1JB102J | AB | | | 1 kohm,1/16W |
| R324 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |

| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[8] RESISTORS** | | | | | |
| R325 | VRS-CZ1JB123D | AA | | | 12 kohms,1/16W |
| R326 | VRS-CZ1JB103D | AB | | | 10 kohm,1/16W |
| R327 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R328 | VRS-CZ1JB103D | AB | | | 10 kohm,1/16W |
| R329 | VRS-CZ1JB273D | AA | | | 27 kohms,1/16W |
| R330 | VRS-CZ1JB123D | AA | | | 12 kohms,1/16W |
| R331 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R332 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R333 | VRS-CZ1JB223D | AB | | | 22 kohms,1/16W |
| R337 | VRS-CZ1JB270J | AA | | | 27 ohms,1/16W |
| R338 | VRS-CZ1JB270J | AA | | | 27 ohms,1/16W |
| R342 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R344 | VRS-CZ1JB683J | AB | | | 68 kohms,1/16W |
| R345 | VRS-CZ1JB683J | AB | | | 68 kohms,1/16W |
| R400 | VRS-CZ1JB102J | AB | | | 1 kohm,1/16W |
| R401 | VRS-CZ1JB102J | AB | | | 1 kohm,1/16W |
| R402 | VRS-CZ1JB473J | AA | | | 47 kohms,1/16W |
| R404 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R405 | VRS-CZ1JB333J | AB | | | 33 kohms,1/16W |
| R406 | VRS-CZ1JB154J | AA | | | 150 kohms,1/16W |
| R407 | VRS-CZ1JB153J | AA | | | 15 kohms,1/16W |
| R408 | VRS-CZ1JB153F | AA | | | 15 kohms,1/16W |
| R409 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R410 | VRS-CZ1JB564F | AB | | | 560 kohms,1/16W |
| R411 | VRS-CZ1JB224F | AB | | | 220 kohms,1/16W |
| R412 | VRS-CZ1JB684F | AA | | | 680 kohms,1/16W |
| R413 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R414 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R415 | VRS-CZ1JB684F | AA | | | 680 kohms,1/16W |
| R416 | VRS-CZ1JB124F | AA | | | 120 kohms,1/16W |
| R417 | VRS-CZ1JB684F | AA | | | 680 kohms,1/16W |
| R418 | VRS-CZ1JB124F | AA | | | 120 kohms,1/16W |
| R419 | VRS-CZ1JB474F | AA | | | 470 kohms,1/16W |
| R420 | VRS-CZ1JB334F | | | | 330 kohms,1/16W |
| R421 | VRS-CZ1JB224J | AA | | | 220 kohms,1/16W |
| R422 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R423 | VRS-TV2AB6R8J | AA | | | 6.8 ohms,1/10W |
| R424 | VRS-CZ1JB274F | | | | 270 kohms,1/16W |
| R425 | VRS-CZ1JB334F | | | | 330 kohms,1/16W |
| R426 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R427 | VRS-CZ1JB154J | AA | | | 150 kohms,1/16W |
| R428 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R429 | VRS-CZ1JB103J | AA | | | 10 kohm,1/16W |
| R430 | VRS-CZ1JB103J | AA | | | 10 kohm,1/16W |
| R433 | VRS-CZ1JB564J | AA | | | 560 kohms,1/16W |
| R434 | VRS-CZ1JB562J | AB | | | 5.6 kohms,1/16W |
| R435 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R436 | VRS-CZ1JB332F | AA | | | 3.3 kohms,1/16W |
| R437 | VRS-CZ1JB102J | AB | | | 1 kohm,1/16W |
| R438 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R443 | VRS-CZ1JB681J | AB | | | 680 ohms,1/16W |
| R445 | VRS-CZ1JB564J | AA | | | 560 kohms,1/16W |
| R446 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R448 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R449 | VRS-CZ1JB101J | AB | | | 100 ohm,1/16W |
| R450 | VRS-TQ2BB000J | AA | | | 0 ohm,Jumper,1.55x3.1mm,Green |
| R451 | VRS-CZ1JB562J | AB | | | 5.6 kohms,1/16W |
| R452 | VRS-CZ1JB681J | AB | | | 680 ohms,1/16W |
| R453 | VRS-CZ1JB681J | AB | | | 680 ohms,1/16W |
| R501 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R502 | VRS-CZ1JB104J | AA | | | 100 kohm,1/16W |
| R503 | VRS-CZ1JB103J | AA | | | 10 kohm,1/16W |
| R504 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R507 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R508 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R509 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R512 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R515 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R516 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R517 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R518 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R519 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R520 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R521 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R522 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R523 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R524 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R525 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R526 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R527 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R528 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R529 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R530 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R531 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R532 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |

| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[8] RESISTORS** | | | | | |
| R533 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R534 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R535 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R536 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R537 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R538 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R539 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R540 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R541 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R542 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R543 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R544 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R545 | VRS-CZ1JB330J | AA | | | 33 ohms,1/16W |
| R706 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| R709 | VRS-CZ1JB000J | AB | | | 0 ohm,Jumper,0.5x1.0mm |
| **[9] OTHER CIRCUITRY PARTS** | | | | | |
| ⚠ F400 | QFS-L162AAWNZ | AD | | | Fuse,1.6A/36V |
| J300 | QJAKMA002AWZZ | AD | | | Headphones Terminal |
| J400 | QJAKC0007AWZZ | AF | | | DC In 6V |
| P401 | QCNCM941BAFZZ | AD | | | Battery Terminal,2Pin |
| SC200 | QJAKZA003AWZZ | AE | | | USB Terminal |
| SC500 | QCNCWA024AWZZ | AK | | | FPC Connector 50Pin |
| SW300 | QSW-S0935AFZZ | AD | | | Switch,Slide Type [Hold] |
| SW301 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Return/Power Off] |
| SW302 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Menu/Power On] |
| SW303 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Function] |
| SW304 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Skip Down/Scroll Left/Review] |
| SW305 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Volume Up/Scroll Up] |
| SW306 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Volume Down/Scroll Down] |
| SW307 | QSW-K0237AFZZ | AC | | | Switch,Key Type [Skip Up/Scroll Right/Cue] |
| SW401 | QSW-S0935AFZZ | AD | | | Switch,Slide Type [Battery/ON/OFF] |
| **[10] CABINET PARTS** | | | | | |
| 201 | GCABAA042AWSA | AL | | | Top Cabinet |
| 202 | PSHEZA086AWZZ | AC | | | Tape,Window |
| 203 | GCOVAA113AWSA | AL | | | Window |
| 204 | HDECPA010AWSA | AC | | | Button,Decoration |
| 205 | PCUSZA010AWZZ | AC | | | Cushion,LCD |
| 206 | JKNBZA136AWSA | AL | | | Button,Operation A |
| 207 | JKNBZA137AWSA | AF | | | Button,Operation B |
| 208 | GCABBA043AWSA | AL | | | Bottom Cabinet |
| 209 | PSHEZA085AWZZ | AD | | | Sheet,Shield |
| 210 | PSLDMA050AWZZ | AE | | | Cushion,Shield |
| 211 | JKNBZA131AWSA | AE | | | Button,Hold |
| 212 | JKNBZA132AWSA | AE | | | Button,Power |
| 213 | RUiTZA008AWZZ | BP | | | LCD Unit |
| 214 | PSLDMA049AWFW | AE | | | LCD Shield Case |
| 215 | Ki-OHA001AWZZ | ** | | | Hard Disc |
| 216 | PCUSGA050AWZZ | AE | | | Insulator |
| 217 | RUiTDA004AWZZ | AY | | | HDD FPC Unit |
| 218 | LHLDZA071AWFW | AG | | | Holder,HDD |
| 219 | PSHEZA088AWZZ | AB | | | Tape,Battery |
| 220 | TLABNA060AW02 | | | | Label,Serial No. [Except for U.K.] |
| 220 | TLABNA060AW03 | | | | Label,Serial No. [For U.K.] |
| 601 | LX-JZA015AWF6 | AD | | | Screw,M1.4x5 |
| 602 | LX-BZ1008AFF6 | AD | | | Screw,M1.4x2 |
| 603 | LX-JZA013AWFN | AB | | | Screw,M1.4x4 |

# [11] ACCESSORIES/PACKING PARTS

| | | |
|---|---|---|
| 1 | TiNSEA114AWZZ | Operation Manual |
| 2 | SPAKCA286AWZZ | Packing Case |
| 3 | TiNSEA115AWZZ | Quick Guide |
| 4 | RPHOHA005AWZZ | Headphone |
| 5 | RADPAA007AWZZ | AC Adapter |
| 6 | QCNWGA020AWZZ | USB Cable |
| 7 | SPAKAA088AWZZ | Unit Pad |
| 8 | SSAKHA056AWZZ | Polyethylene Bag, Unit |
| 9 | TLABN0092AWZZ | Serial No. Label |
| 10 | TLABZA314AWZZ | Feature Label |
| 11 | TCADSA001AWZZ | Service Card |
| 12 | SPAKSA001AWZZ | Sleeve |
| 13 | SPAKZ0490AWZZ | Pad |




| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[11] ACCESSORIES/PACKING PARTS** | | | | | |
| 1 | TiNSEA114AWZZ | AE | | | Operation Manual [For U.K.] |
| 1 | TiNSZA173AWZZ | AP | | | Operation Manual [Except for U.K.] |
| 2 | SPAKCA286AWZZ | | | | Packing Case |
| 3 | TiNSEA115AWZZ | | | | Quick Guide [For U.K. Only] |
| 4 | RPHOHA005AWZZ | AU | | | Headphone |
| ⚠ 5 | RADPAA006AWZZ | BB | | | AC Adaptor [Except for U.K.] |
| ⚠ 5 | RADPAA007AWZZ | BC | | | AC Adaptor [For U.K.] |
| 6 | QCNWGA020AWZZ | | | | Cable,USB |
| 7 | SPAKAA088AWZZ | | | | Unit Pad |
| 8 | SSAKHA056AWZZ | | | | Polyethylene Bag,Set |
| 9 | TLABN0092AWZZ | AB | | | Label,Serial No. (Packing Case) [For U.K.] |
| 9 | TLABN0092AW02 | AB | | | Label,Serial No. (Packing Case) [Except for U.K.] |
| 10 | TLABZA314AWZZ | | | | Label,Feature |
| 11 | TCADSA001AWZZ | | | | Card,Service |

| NO. | PARTS CODE | PRICE RANK | NEW MARK | PART RANK | DESCRIPTION |
|---|---|---|---|---|---|
| **[11] ACCESSORIES/PACKING PARTS** | | | | | |
| 12 | SPAKSA001AWZZ | | | | Sleeve |
| 13 | SPAKZ0490AWZZ | AC | | | Pad |
| 14 | -------- | ~ | | | Battery |
| **[12] P.W.B. ASSEMBLY (Not Replacement Item)** | | | | | |
| PWB-A | 92LPWB6362HDDS | ~ | | | Main |

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| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| 【 G 】 | | | | |
| GCABAA042AWSA | 10-201 | AL | | |
| GCABBA043AWSA | 10-208 | AL | | |
| GCOVAA113AWSA | 10-203 | AL | | |
| 【 H 】 | | | | |
| HDECPA010AWSA | 10-204 | AC | | |
| 【 J 】 | | | | |
| JKNBZA131AWSA | 10-211 | AE | | |
| JKNBZA132AWSA | 10-212 | AE | | |
| JKNBZA136AWSA | 10-206 | AL | | |
| JKNBZA137AWSA | 10-207 | AF | | |
| 【 K 】 | | | | |
| Ki-OHA001AWZZ | 10-215 | ** | | |
| 【 L 】 | | | | |
| LHLDZA071AWFW | 10-218 | AG | | |
| LX-BZ1008AFF6 | 10-602 | AD | | |
| LX-JZA013AWFN | 10-603 | AB | | |
| LX-JZA015AWF6 | 10-601 | AD | | |
| 【 P 】 | | | | |
| PCUSGA050AWZZ | 10-216 | AE | | |
| PCUSZA010AWZZ | 10-205 | AC | | |
| PSHEZA085AWZZ | 10-209 | AD | | |
| PSHEZA086AWZZ | 10-202 | AC | | |
| PSHEZA088AWZZ | 10-219 | AB | | |
| PSLDMA049AWFW | 10-214 | AE | | |
| PSLDMA050AWZZ | 10-210 | AE | | |
| 【 Q 】 | | | | |
| QCNCM941BAFZZ | 9-P401 | AD | | |
| QCNCWA024AWZZ | 9-SC500 | AK | | |
| QCNWGA020AWZZ | 11-6 | | | |
| QFS-L162AAWNZ | 9-F400 | AD | | |
| QJAKC0007AWZZ | 9-J400 | AF | | |
| QJAKMA002AWZZ | 9-J300 | AD | | |
| QJAKZA003AWZZ | 9-SC200 | AE | | |
| QSW-K0237AFZZ | 9-SW301 | AC | | |
| 〃 | 9-SW302 | AC | | |
| 〃 | 9-SW303 | AC | | |
| 〃 | 9-SW304 | AC | | |
| 〃 | 9-SW305 | AC | | |
| 〃 | 9-SW306 | AC | | |
| 〃 | 9-SW307 | AC | | |
| QSW-S0935AFZZ | 9-SW300 | AD | | |
| 〃 | 9-SW401 | AD | | |
| 【 R 】 | | | | |
| RADPAA006AWZZ | 11-5 | BB | | |
| RADPAA007AWZZ | 11-5 | BC | | |
| RCiLCA009AWZZ | 4-FB101 | AB | | |
| 〃 | 4-FB102 | AB | | |
| RCiLCA011AWZZ | 4-L402 | AE | | |
| 〃 | 4-L403 | AE | | |
| 〃 | 4-L404 | AE | | |
| RCiLCA013AWZZ | 4-FB202 | AD | | |
| 〃 | 4-FB203 | AD | | |
| RCiLCA014AWZZ | 4-L405 | AE | | |
| RCiLCA015AWZZ | 4-FB100 | AB | | |
| 〃 | 4-FB103 | AB | | |
| 〃 | 4-FB104 | AB | | |
| 〃 | 4-FB200 | AB | | |
| 〃 | 4-FB201 | AB | | |
| 〃 | 4-FB500 | AB | | |
| 〃 | 4-FB501 | AB | | |
| RCiLCA018AWZZ | 4-FB300 | AB | | |
| 〃 | 4-FB301 | AB | | |
| RCiLFA001AWZZ | 4-L201 | AF | | |
| RCiLFA002AWZZ | 4-L400 | AL | | |
| RC-KZ0013AWZZ | 7-C101 | AC | | |
| 〃 | 7-C102 | AC | | |
| 〃 | 7-C103 | AC | | |
| 〃 | 7-C125 | AC | | |
| 〃 | 7-C126 | AC | | |
| 〃 | 7-C129 | AC | | |
| 〃 | 7-C500 | AC | | |
| 〃 | 7-C510 | AC | | |
| 〃 | 7-C703 | AC | | |
| RC-KZ0014AWZZ | 7-C402 | AD | | |
| 〃 | 7-C403 | AD | | |
| 〃 | 7-C404 | AD | | |
| 〃 | 7-C405 | AD | | |
| 〃 | 7-C406 | AD | | |

| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| 〃 | 7-C413 | AD | | |
| 〃 | 7-C414 | AD | | |
| 〃 | 7-C417 | AD | | |
| 〃 | 7-C418 | AD | | |
| 〃 | 7-C422 | AD | | |
| RC-KZ3017AWZZ | 7-C427 | AD | | |
| 〃 | 7-C429 | AD | | |
| RC-KZ3021AWZZ | 7-C426 | AC | | |
| RCRSCA007AWZZ | 6-X100 | AH | | |
| RCRSCA009AWZZ | 6-X200 | AH | | |
| RH-iXA068AWZZ | 1-iC100 | BK | | |
| RH-iXA069AWZZ | 1-iC500 | BD | | |
| RPHOHA005AWZZ | 11-4 | AU | | |
| RUiTDA004AWZZ | 10-217 | AY | | |
| RUiTZA008AWZZ | 10-213 | BP | | |
| RUNTZA003AW01 | 1-iC503 | AV | | |
| RUNTZA004AW01 | 1-iC202 | AK | | |
| 【 S 】 | | | | |
| SPAKAA088AWZZ | 11-7 | | | |
| SPAKCA286AWZZ | 11-2 | | | |
| SPAKSA001AWZZ | 11-12 | | | |
| SPAKZ0490AWZZ | 11-13 | AC | | |
| SSAKHA056AWZZ | 11-8 | | | |
| 【 T 】 | | | | |
| TCADSA001AWZZ | 11-11 | | | |
| TiNSEA114AWZZ | 11-1 | AE | | |
| TiNSEA115AWZZ | 11-3 | | | |
| TiNSZA173AWZZ | 11-1 | AP | | |
| TLABN0092AW02 | 11-9 | AB | | |
| TLABN0092AWZZ | 11-9 | AB | | |
| TLABNA060AW02 | 10-220 | | | |
| TLABNA060AW03 | 10-220 | | | |
| TLABZA314AWZZ | 11-10 | | | |
| 【 V 】 | | | | |
| VCCCCZ1HH100D | 7-C407 | AA | | |
| 〃 | 7-C409 | AA | | |
| VCCCCZ1HH120J | 7-C122 | AA | | |
| 〃 | 7-C202 | AA | | |
| 〃 | 7-C203 | AA | | |
| VCCCCZ1HH151J | 7-C408 | AB | | |
| 〃 | 7-C410 | AB | | |
| VCCCCZ1HH330J | 7-C411 | AB | | |
| 〃 | 7-C432 | AB | | |
| VCCCCZ1HH470J | 7-C412 | AB | | |
| VCCCCZ1HH8R0D | 7-C108 | AB | | |
| 〃 | 7-C109 | AB | | |
| 〃 | 7-C511 | AB | | |
| VCKYCY1AB224K | 7-C423 | AB | | |
| VCKYCZ1AB104K | 7-C106 | AB | | |
| 〃 | 7-C110 | AB | | |
| 〃 | 7-C111 | AB | | |
| 〃 | 7-C118 | AB | | |
| 〃 | 7-C120 | AB | | |
| 〃 | 7-C124 | AB | | |
| 〃 | 7-C200 | AB | | |
| 〃 | 7-C201 | AB | | |
| 〃 | 7-C208 | AB | | |
| 〃 | 7-C209 | AB | | |
| 〃 | 7-C210 | AB | | |
| 〃 | 7-C211 | AB | | |
| 〃 | 7-C302 | AB | | |
| 〃 | 7-C303 | AB | | |
| 〃 | 7-C306 | AB | | |
| 〃 | 7-C309 | AB | | |
| 〃 | 7-C311 | AB | | |
| 〃 | 7-C401 | AB | | |
| 〃 | 7-C415 | AB | | |
| 〃 | 7-C416 | AB | | |
| 〃 | 7-C419 | AB | | |
| 〃 | 7-C420 | AB | | |
| 〃 | 7-C424 | AB | | |
| 〃 | 7-C425 | AB | | |
| 〃 | 7-C428 | AB | | |
| 〃 | 7-C434 | AB | | |
| VCKYCZ1AB473K | 7-C431 | AB | | |
| VCKYCZ1CB103K | 7-C104 | AB | | |
| 〃 | 7-C105 | AB | | |
| 〃 | 7-C107 | AB | | |
| 〃 | 7-C114 | AB | | |

| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| 〃 | 7-C115 | AB | | |
| 〃 | 7-C116 | AB | | |
| 〃 | 7-C117 | AB | | |
| 〃 | 7-C119 | AB | | |
| 〃 | 7-C121 | AB | | |
| 〃 | 7-C127 | AB | | |
| 〃 | 7-C128 | AB | | |
| 〃 | 7-C130 | AB | | |
| 〃 | 7-C131 | AB | | |
| 〃 | 7-C132 | AB | | |
| 〃 | 7-C133 | AB | | |
| 〃 | 7-C204 | AB | | |
| 〃 | 7-C205 | AB | | |
| 〃 | 7-C318 | AB | | |
| 〃 | 7-C319 | AB | | |
| 〃 | 7-C320 | AB | | |
| 〃 | 7-C321 | AB | | |
| 〃 | 7-C501 | AB | | |
| 〃 | 7-C502 | AB | | |
| 〃 | 7-C503 | AB | | |
| 〃 | 7-C504 | AB | | |
| 〃 | 7-C505 | AB | | |
| 〃 | 7-C506 | AB | | |
| 〃 | 7-C507 | AB | | |
| 〃 | 7-C508 | AB | | |
| 〃 | 7-C509 | AB | | |
| 〃 | 7-C700 | AB | | |
| VCKYCZ1HB332K | 7-C314 | AA | | |
| 〃 | 7-C315 | AA | | |
| VCKYTV1AB105K | 7-C316 | AD | | |
| 〃 | 7-C317 | AD | | |
| 〃 | 7-C400 | AD | | |
| 〃 | 7-C430 | AD | | |
| VCKYTV1AB475K | 7-C206 | AC | | |
| 〃 | 7-C207 | AC | | |
| VCSATA0GJ107M | 7-C310 | | | |
| VCSATA0JJ106M | 7-C300 | AD | | |
| 〃 | 7-C301 | AD | | |
| 〃 | 7-C307 | AD | | |
| 〃 | 7-C308 | AD | | |
| VCSATE0JJ107M | 7-C312 | AE | | |
| 〃 | 7-C313 | AE | | |
| VHD1SS400//-1 | 3-D404 | AB | | |
| 〃 | 3-D406 | AB | | |
| VHDFS1J3TP+-1 | 3-D407 | AE | | |
| VHDKDS121E+-1 | 3-D401 | AC | | |
| 〃 | 3-D403 | AC | | |
| VHDRB160M3+-1 | 3-D400 | AD | | |
| VHDRB520S30-1 | 3-D301 | AC | | |
| 〃 | 3-D302 | AC | | |
| 〃 | 3-D402 | AC | | |
| 〃 | 3-D405 | AC | | |
| VHDRB521S30-1 | 3-D303 | AC | | |
| 〃 | 3-D304 | AC | | |
| VHEUDZS33B+-1 | 3-D700 | AC | | |
| VHEUDZS8R2B-1 | 3-D408 | AC | | |
| VHi1112B31M-1 | 1-iC302 | AD | | |
| VHi80827CNN-1 | 1-iC406 | AD | | |
| VHiBQ24032+-1 | 1-iC400 | AV | | |
| VHiCY68013A-1 | 1-iC201 | BC | | |
| VHiMM3097++-1 | 1-iC405 | AK | | |
| VHiTC7SZ32U-1 | 1-iC200 | AD | | |
| 〃 | 1-iC502 | AD | | |
| 〃 | 1-iC700 | AD | | |
| VHiTC7W66FU-1 | 1-iC501 | AE | | |
| VHiTLV320D+-1 | 1-iC301 | AU | | |
| VHiTPS62200-1 | 1-iC401 | AN | | |
| VHiTPS62220-1 | 1-iC403 | AN | | |
| 〃 | 1-iC404 | AN | | |
| VHiTPS72201-1 | 1-iC402 | AH | | |
| VHV10120MAB-1 | 5-VA301 | AB | | |
| 〃 | 5-VA302 | AB | | |
| VPCEM100M0R7N | 4-L100 | AC | | |
| VRS-CZ1JB000J | 8-R101 | AB | | |
| 〃 | 8-R102 | AB | | |
| 〃 | 8-R103 | AB | | |
| 〃 | 8-R104 | AB | | |
| 〃 | 8-R105 | AB | | |
| 〃 | 8-R107 | AB | | |
| 〃 | 8-R111 | AB | | |
| 〃 | 8-R115 | AB | | |
| 〃 | 8-R116 | AB | | |

| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| 〃 | 8-R126 | AB | | |
| 〃 | 8-R127 | AB | | |
| 〃 | 8-R130 | AB | | |
| 〃 | 8-R210 | AB | | |
| 〃 | 8-R212 | AB | | |
| 〃 | 8-R213 | AB | | |
| 〃 | 8-R216 | AB | | |
| 〃 | 8-R301 | AB | | |
| 〃 | 8-R304 | AB | | |
| 〃 | 8-R305 | AB | | |
| 〃 | 8-R313 | AB | | |
| 〃 | 8-R317 | AB | | |
| 〃 | 8-R318 | AB | | |
| 〃 | 8-R319 | AB | | |
| 〃 | 8-R322 | AB | | |
| 〃 | 8-R324 | AB | | |
| 〃 | 8-R327 | AB | | |
| 〃 | 8-R342 | AB | | |
| 〃 | 8-R422 | AB | | |
| 〃 | 8-R426 | AB | | |
| 〃 | 8-R428 | AB | | |
| 〃 | 8-R438 | AB | | |
| 〃 | 8-R446 | AB | | |
| 〃 | 8-R448 | AB | | |
| 〃 | 8-R501 | AB | | |
| 〃 | 8-R504 | AB | | |
| 〃 | 8-R507 | AB | | |
| 〃 | 8-R508 | AB | | |
| 〃 | 8-R509 | AB | | |
| 〃 | 8-R706 | AB | | |
| 〃 | 8-R709 | AB | | |
| VRS-CZ1JB101J | 8-R308 | AB | | |
| 〃 | 8-R309 | AB | | |
| 〃 | 8-R310 | AB | | |
| 〃 | 8-R312 | AB | | |
| 〃 | 8-R315 | AB | | |
| 〃 | 8-R449 | AB | | |
| VRS-CZ1JB102J | 8-R321 | AB | | |
| 〃 | 8-R323 | AB | | |
| 〃 | 8-R400 | AB | | |
| 〃 | 8-R401 | AB | | |
| 〃 | 8-R437 | AB | | |
| VRS-CZ1JB103D | 8-R326 | AB | | |
| 〃 | 8-R328 | AB | | |
| VRS-CZ1JB103J | 7-C112 | AA | | |
| 〃 | 8-R205 | AA | | |
| 〃 | 8-R429 | AA | | |
| 〃 | 8-R430 | AA | | |
| 〃 | 8-R503 | AA | | |
| VRS-CZ1JB104J | 8-R109 | AA | | |
| 〃 | 8-R114 | AA | | |
| 〃 | 8-R117 | AA | | |
| 〃 | 8-R118 | AA | | |
| 〃 | 8-R120 | AA | | |
| 〃 | 8-R124 | AA | | |
| 〃 | 8-R125 | AA | | |
| 〃 | 8-R129 | AA | | |
| 〃 | 8-R203 | AA | | |
| 〃 | 8-R206 | AA | | |
| 〃 | 8-R209 | AA | | |
| 〃 | 8-R314 | AA | | |
| 〃 | 8-R316 | AA | | |
| 〃 | 8-R331 | AA | | |
| 〃 | 8-R332 | AA | | |
| 〃 | 8-R404 | AA | | |
| 〃 | 8-R409 | AA | | |
| 〃 | 8-R413 | AA | | |
| 〃 | 8-R414 | AA | | |
| 〃 | 8-R435 | AA | | |
| 〃 | 8-R502 | AA | | |
| VRS-CZ1JB123D | 8-R325 | AA | | |
| 〃 | 8-R330 | AA | | |
| VRS-CZ1JB124F | 8-R416 | AA | | |
| 〃 | 8-R418 | AA | | |
| VRS-CZ1JB124J | 8-R201 | AB | | |
| VRS-CZ1JB152D | 8-R320 | AA | | |
| VRS-CZ1JB152J | 8-R122 | AB | | |
| 〃 | 8-R123 | AB | | |
| VRS-CZ1JB153F | 8-R408 | AA | | |
| VRS-CZ1JB153J | 8-R407 | AA | | |
| VRS-CZ1JB154J | 8-R200 | AA | | |
| 〃 | 8-R406 | AA | | |

| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| 〃 | 8-R427 | AA | | |
| VRS-CZ1JB222J | 8-R207 | AB | | |
| VRS-CZ1JB223D | 8-R333 | AB | | |
| VRS-CZ1JB224F | 8-R411 | AB | | |
| VRS-CZ1JB224J | 8-R421 | AA | | |
| VRS-CZ1JB270J | 8-R337 | AA | | |
| 〃 | 8-R338 | AA | | |
| VRS-CZ1JB273D | 8-R329 | AA | | |
| VRS-CZ1JB274F | 8-R424 | | | |
| VRS-CZ1JB330J | 8-R100 | AA | | |
| 〃 | 8-R108 | AA | | |
| 〃 | 8-R132 | AA | | |
| 〃 | 8-R133 | AA | | |
| 〃 | 8-R134 | AA | | |
| 〃 | 8-R135 | AA | | |
| 〃 | 8-R136 | AA | | |
| 〃 | 8-R306 | AA | | |
| 〃 | 8-R311 | AA | | |
| 〃 | 8-R512 | AA | | |
| 〃 | 8-R515 | AA | | |
| 〃 | 8-R516 | AA | | |
| 〃 | 8-R517 | AA | | |
| 〃 | 8-R518 | AA | | |
| 〃 | 8-R519 | AA | | |
| 〃 | 8-R520 | AA | | |
| 〃 | 8-R521 | AA | | |
| 〃 | 8-R522 | AA | | |
| 〃 | 8-R523 | AA | | |
| 〃 | 8-R524 | AA | | |
| 〃 | 8-R525 | AA | | |
| 〃 | 8-R526 | AA | | |
| 〃 | 8-R527 | AA | | |
| 〃 | 8-R528 | AA | | |
| 〃 | 8-R529 | AA | | |
| 〃 | 8-R530 | AA | | |
| 〃 | 8-R531 | AA | | |
| 〃 | 8-R532 | AA | | |
| 〃 | 8-R533 | AA | | |
| 〃 | 8-R534 | AA | | |
| 〃 | 8-R535 | AA | | |
| 〃 | 8-R536 | AA | | |
| 〃 | 8-R537 | AA | | |
| 〃 | 8-R538 | AA | | |
| 〃 | 8-R539 | AA | | |
| 〃 | 8-R540 | AA | | |
| 〃 | 8-R541 | AA | | |
| 〃 | 8-R542 | AA | | |
| 〃 | 8-R543 | AA | | |
| 〃 | 8-R544 | AA | | |
| 〃 | 8-R545 | AA | | |
| VRS-CZ1JB332F | 8-R436 | AA | | |
| VRS-CZ1JB332J | 8-R214 | AB | | |
| 〃 | 8-R215 | AB | | |
| VRS-CZ1JB333J | 8-R405 | AB | | |
| VRS-CZ1JB334F | 8-R420 | | | |
| 〃 | 8-R425 | | | |
| VRS-CZ1JB473J | 8-R131 | AA | | |
| 〃 | 8-R204 | AA | | |
| 〃 | 8-R402 | AA | | |
| VRS-CZ1JB474F | 8-R419 | AA | | |
| VRS-CZ1JB562J | 8-R434 | AB | | |
| 〃 | 8-R451 | AB | | |
| VRS-CZ1JB564F | 8-R410 | AB | | |
| VRS-CZ1JB564J | 8-R433 | AA | | |
| 〃 | 8-R445 | AA | | |
| VRS-CZ1JB681J | 8-R443 | AB | | |
| 〃 | 8-R452 | AB | | |
| 〃 | 8-R453 | AB | | |
| VRS-CZ1JB683J | 8-R140 | AB | | |
| 〃 | 8-R344 | AB | | |
| 〃 | 8-R345 | AB | | |
| VRS-CZ1JB684F | 8-R412 | AA | | |
| 〃 | 8-R415 | AA | | |
| 〃 | 8-R417 | AA | | |
| VRS-TQ2BB000J | 8-R450 | AA | | |
| VRS-TV2AB000J | 8-R137 | AA | | |
| 〃 | 8-R217 | AA | | |
| VRS-TV2AB6R8J | 8-R423 | AA | | |
| VSMCH3405++-1 | 2-Q400 | AE | | |
| 〃 | 2-Q401 | AE | | |
| 〃 | 2-Q404 | AE | | |
| 〃 | 2-Q406 | AE | | |

| PARTS CODE | No. | PRICE RANK | NEW MARK | PART RANK |
|---|---|---|---|---|
| VSRN1104///-1 | 2-Q402 | AB | | |
| VSRN2104+++-1 | 2-Q403 | AB | | |
| 【 9 】 | | | | |
| 92LPWB6362HDDS | 12-PWB-A | ~ | | |

**"HOW TO ORDER REPLACEMENT PARTS"**

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
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1-800-BE-SHARP

## Explanation of capacitors/resistors parts codes

### Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J.. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

### Resistors

VRD ..... Carbon-film type
VRS ..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J.. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

**NOTE:**
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

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